

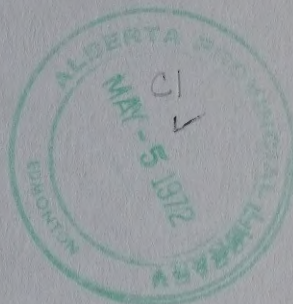
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## ANNUAL REPORT

OF THE

# Department of Health

INCLUDING

# Vital Statistics Division

PROVINCE OF ALBERTA

1970

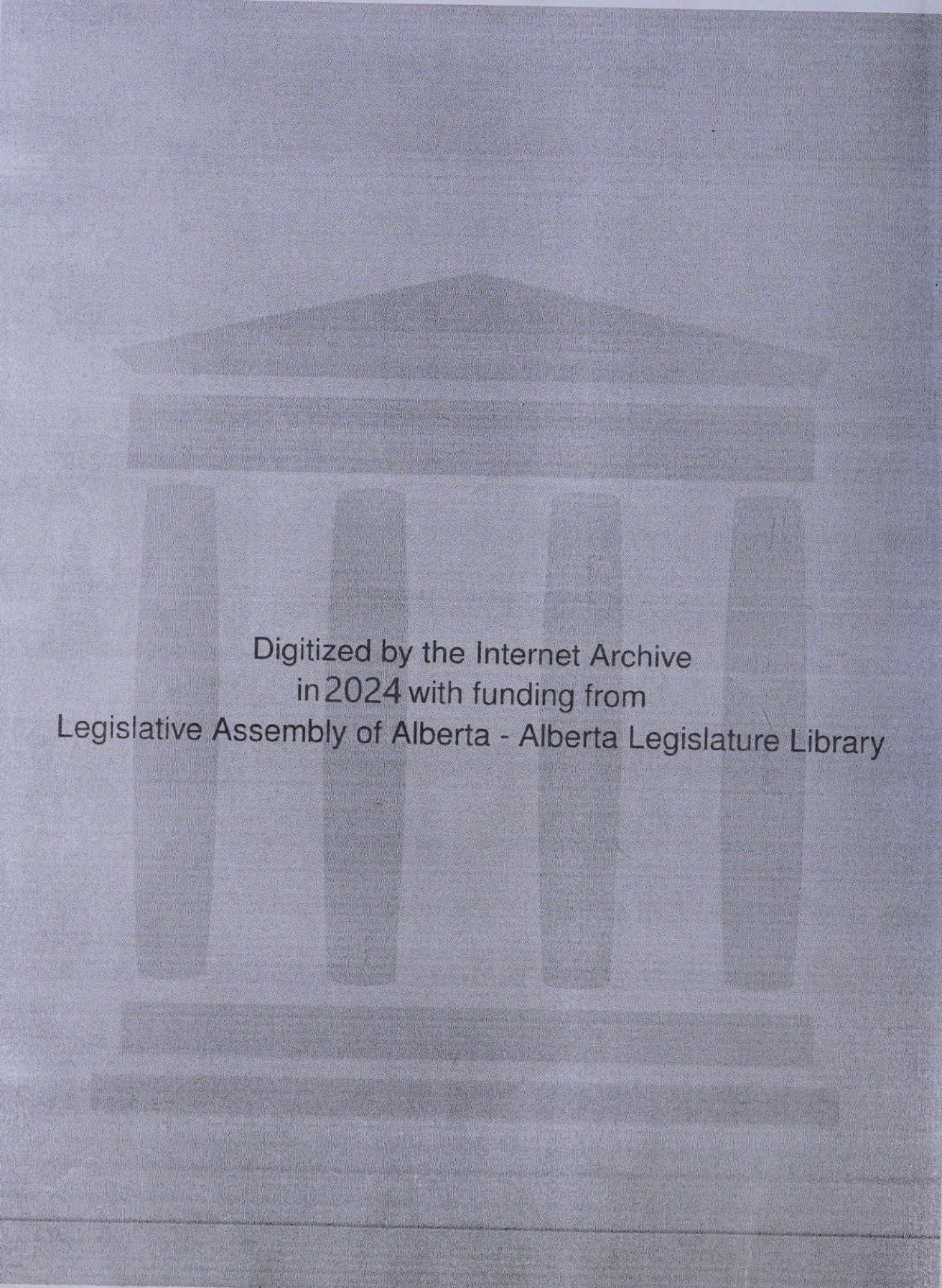
PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA

Printed by L. S. WALL, Printer to the Queen's Most Excellent Majesty

1972





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## **ANNUAL REPORT**

OF THE

# **Department of Health**

INCLUDING

# **Vital Statistics Division**

PROVINCE OF ALBERTA

**1970**

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PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

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EDMONTON, ALBERTA

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1972





November 30, 1971.

TO HIS HONOUR,  
J. W. GRANT MacEWAN,  
Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to transmit herewith the Annual Report of the Department of Health for the year 1970.

I have the honour to be, Sir,

Your obedient Servant,  
NEIL CRAWFORD,  
Minister of Health  
and Social Development.







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PART I

November 30, 1971.

TO THE HONOURABLE MR. NEIL CRAWFORD,  
Minister of Health and Social Development,  
Legislative Building, Edmonton, Alberta.

SIR:

I have the honour to submit herewith the Fifty-second Annual Report of the Department of Health.

I have the honour to be, Sir,

Your obedient Servant,

P. B. ROSE, M.D.,  
Deputy Minister of Health and  
Social Development Institutions.







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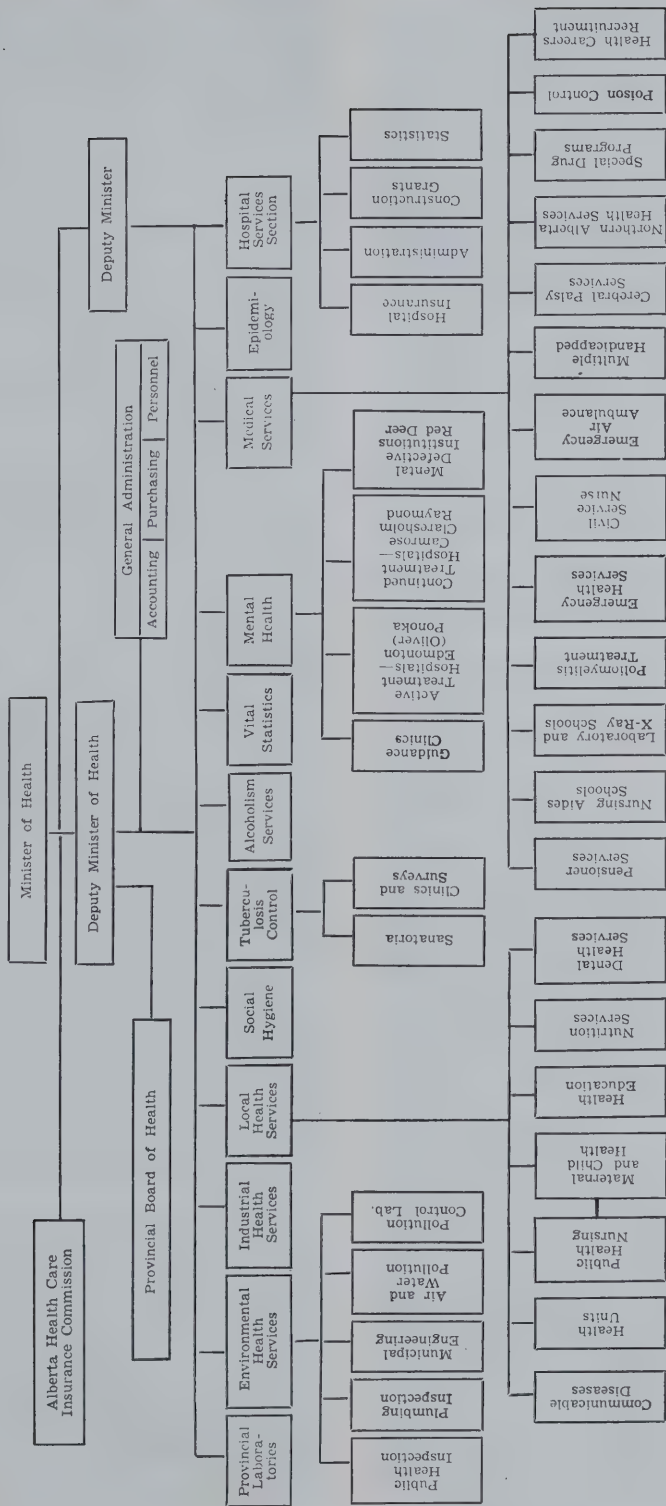
Vital Statistics ..... (See separate Contents Page)

*Note: See separate publication covering Annual Report of the Hospital Services Section for the year 1970.*





# Department of Health—Alberta DIVISIONAL ORGANIZATION December — 1970



## PROVINCIAL BOARD OF HEALTH

The year 1970 was an historic year for the Provincial Board of Health. There were significant changes affecting the organization and operations of the Board both in membership and number of meetings. The number of meetings was increased with the Board meeting regularly on the first Tuesday of each month. Many of the meetings occupied most of the day. An amendment to The Public Health Act which was passed during the 1970 Session of the Legislative Assembly authorized an increase in the membership of the Board. As a result of this amendment the Board was enlarged to five members. The membership at the beginning of the year included:

Dr. P. B. Rose, Deputy Minister of Health—Chairman.

Mr. H. L. Hogge, Director, Division of Environmental Health Services—Deputy Chairman.

Dr. J. M. S. Dixon, Director, Provincial Laboratories of Public Health—Member.

The new members, who attended their first meeting on June 2nd, 1970, were:

Dr. W. Watt, Director, Division of Local Health Services.

Dr. J. G. O'Donoghue, Director, Division of Veterinary Services, Department of Agriculture.

The new members helped to broaden the outlook of the Board.

Mr. L. E. Stewart, Chief Public Health Inspector, acted as Secretary.

### Regulations Passed or Amended During the Year

There were a number of changes to Provincial Board of Health Regulations made during the year. Twenty-one Orders-in-Council were involved. Significant changes included:—

Alberta Regulation 23/70 (O.C. 152/70), Regulations Respecting Water Supplies. These regulations replaced former Regulations Respecting Water and Ice. Matters affecting the use of surface water supplies and wells, etc. for domestic purposes have been clarified and updated by the new regulations.

Alberta Regulation 24/70 (O.C. 153/70), Amendment to Regulations Regarding Plumbing and Drainage. These amendments covered certain matters dealing with the plumbing in prefabricated and relocatable buildings.

Alberta Regulation 25/70 (O.C. 154/70), Regulations respecting Housing. These regulations which became effective May 1st, 1970 replaced former regulations on the same subject. Certain sections of the former regulations were clarified in the new regulations.

Alberta Regulation 26/70 (O.C. 155/70), Regulations Respecting the Protection of Persons from the Hazards of Laser Operation. These are new regulations designed to ensure that laser equipment or laser apparatus is not operated in a manner which will endanger persons using the same or in the vicinity. The regulations provide that all laser equipment and apparatus must be approved by the Provincial Board of Health before being used. The regulations also make provision for certain precautions which must be taken whenever laser equipment or apparatus is operated.

Alberta Regulations 27/70 and 156/70 (O.C.'s 156/70 and 831/70), Regulations Respecting the

Disposal of Waste Water and the Control of Water Pollution. These are new regulations designed to control water pollution. The regulations require that a permit must be obtained from the Provincial Board of Health before any polluting material can be placed into a surface water.

Alberta Regulation 62/70 (O.C. 456/70), Regulations Respecting the Notification of Industrial Disease. These are new regulations which require that cases of listed industrial diseases must be reported by the physician to the Division of Industrial Health Services.

Alberta Regulation 232/70 (O.C. 1230/70), Regulations Respecting the Qualification and Licensing of Embalmers. These regulations replaced former regulations on the same subject. The apprenticeship registration fees, examination fees and licensing fees have been increased to cover the costs involved. In addition, certain changes were made to clarify some sections of the regulations.

Alberta Regulation 329/70 (O.C. 1763/70), Regulations Respecting General Administration. These regulations replace previous regulations on the same subject. Certain matters previously included in other regulations which dealt with administration have now been included in these regulations.

Alberta Regulation 375/70 (O.C. 2176/70), Regulations for the Control of Air Pollution. These regulations replace former regulations on the same subject. Changes have been made in the sections dealing with permitted smoke density. The permitted smoke densities have been reduced. Other changes to the regulations have been included for clarification.

Alberta Regulation 399/70 (O.C. 2323/70), Regulations Respecting Restaurants. These replace former regulations on the same subject. One of the significant changes provides temperature limits to which perishable foods must be held. In general, such foods must be held at either less than 40° F. or higher than 150° F. Certain other changes have been made to the regulations to improve administrative efficiency.

Alberta Regulation 400/70 (O.C. 2324/70), Regulations Respecting Food and Drink. These regulations replace former regulations on this subject. The new regulations include requirements for the holding of perishable foods similar to those in the Restaurant Regulations. The new regulations also provide that all food handling establishments must obtain an annual permit from the Local Board of Health. The inclusion of this provision was requested by Local Health Authorities.

During its meetings the Board also approved certain orders on air pollution control, water pollution control and industrial health which were then approved by Order-in-Council. These include the following on air pollution control:—

Alberta Regulation 211/70 (O.C. 1127/70). This order which was filed with the Registrar of Regulations on June 17th, 1970 concerned the Steel Company of Canada plant at Edmonton. The order required that the company provide equipment to reduce emission of particulates by December 31st, 1970. The company was completing this installation at the year's end.

Alberta Regulation 276/70 (O.C. 1480/70). This order which was filed with the Registrar of Regu-



lations on August 12th, 1970 required that Empire Auto Body, Edmonton, discontinue sand-blasting operations at its plant unless and until adequate control measures were installed. The order became effective September 1st, 1970. At the year's end the Department of the Attorney General was carrying out legal proceedings against this company.

The following orders in respect to water pollution control were approved by Order-in-Council:—

Alberta Regulations 140/70, 141/70, 355/70 and 356/70 (O.C.'s 761/70, 762/70, 2044/70 and 2045/70). These orders were issued to the Canadian Sugar Factories Limited, Lethbridge, in respect to its Picture Butte and Taber Sugar Refineries. They required the company to provide screening to remove beet tissues and to provide equipment to eliminate carbonate cake from the waste water effluent from each plant. The orders required that the equipment for removal of carbonate cake be installed by October 1st, 1970 and that the screening be installed by July 31st, 1971. The company did comply with the portion of the order in respect to installation of equipment for removal of carbonate cake and at the year's end was preparing plans in respect to the installation of screening.

Alberta Regulation 182/70 (O.C. 992/70). This order which was filed on May 27th, 1970 was issued to Building Products of Canada Limited in respect to its Wabamun plant. The order required installation of equipment to reduce water pollution by October 31st, 1970. The company complied with the order.

Provincial Board of Health orders approved by Order-in-Council in respect to industrial health were as follows:—

Alberta Regulation 157/70 (O.C. 832/70). This order which was filed on May 6th, 1970 was issued to Canada Metal Company Limited, Calgary. It was issued after investigations had indicated that employees had been exposed to unsafe doses of lead and lead compounds. The order required the company to take necessary steps to ensure the maintenance of satisfactory environmental working conditions. The order further required that there be a demonstrable improvement in the working conditions by November 1st, 1970. There was improvement in the conditions at the plant but after the deadline date it appeared that more improvement in environmental conditions could be made. This matter was being considered by the Board at the year's end with a view to issuing a further specific order to the company.

Alberta Regulation 210/70 (O.C. 1126/70). This order which was filed on June 17th, 1970 was issued to Magadyne Industries Limited, Edmonton. The order was issued after investigations had indicated that employees were exposed to unsafe levels of lead compounds and that there had been cases of lead poisoning. The order required that the company take steps to ensure the maintenance of satisfactory environmental working conditions. The order further required that the changes be completed by January 1st, 1971. At the year's end it was indicated to the Board that the company had made improvements as required. The matter was, however, being followed up to ensure a continuance of more satisfactory conditions.

The Board continued to follow up its policy of requiring all communities disposing of sewage to surface waters to provide sewage treatment facilities. At the beginning of 1970 two Board Orders in this connection were in effect. One of these concerned the Townsite of Banff. The necessary installations were completed and put into operation during 1970. The other Board Order approved by the Lieutenant Governor in Council concerned the provision of sewage treatment facilities at the Townsite of Jasper. This order requires provision of the facilities by November 1st, 1971. Indications were that the order would be complied with by the installation of the necessary facilities during 1971.

During 1970 the Towns of Cardston, Peace River and Rocky Mountain House and the Village of Alliance completed installation of sewage treatment facilities in accordance with instructions given by the Board prior to 1970. The Town of Athabasca and the City of Lethbridge have also been required by Board instructions issued prior to 1970 to complete sewage treatment facilities. The deadlines in each case are during 1971. It is expected the necessary actions will be completed in accordance with the Board's instructions.

During 1970 the Provincial Board of Health issued instructions to the Town of Bassano, the Town of Magrath, the Town of Olds and the City of Red Deer in respect to the provision of sewage treatment facilities. These communities have reached different stages in complying with the Board's instructions. The Town of Calmar is also co-operating with the Board by preparing for the construction of sewage treatment facilities.

The Board gave its attention to many matters in the field of water pollution control during the year. In certain instances specific instructions were given to companies where there were problems in water pollution control. These included instructions in relation to the disposal of a spill of polluting material, disposal of plant effluent to prevent quantities of polluting material entering a creek, the location of a sulphur stockpile to prevent danger to a creek and the location of a plant blow-down to protect a watercourse. There was general co-operation with the Board on the part of the companies concerned.

Water Quality Criteria to apply throughout the Province were approved by the Provincial Board of Health and published.

All of the Board meetings during the year gave some time to air pollution control. As noted earlier in this report there were some Board Orders in respect to air pollution control approved by the Lieutenant Governor in Council. In addition, the Board gave instructions to certain companies where problems occurred. Specific instructions were given to a gas processing plant requiring reduction of emissions of pollutants. In another case a woodworking plant was required to control emission of sawdust and wood chips which were affecting neighboring properties.

The Board also approved Air Quality Standards for the Province of Alberta so that these could be published.

During the year there were a number of cases of persons suffering or believed to be suffering from tuberculosis in an infectious form reported to the

Board. After investigation of each case the Board issued 12 orders covering removal of the persons concerned to hospitals or sanatoria for treatment and examination. These orders were issued under authority contained in the Communicable Disease Regulations where treatment and examination is refused. Thirteen such orders were issued in 1969, 12 in 1968, 3 in 1967 and 4 in 1966.

Twenty-one persons, employees of the Provincial Department of Health and Municipal Nurses were appointed to be Executive Officers of the Provincial Board of Health during 1970. There were 15 cancellations during the year and at the year's end 74 such appointments were in effect. During the year 86 nurses employed by Health Authorities throughout the Province were certified by the Provincial Board of Health to be capable of performing inoculations and vaccinations in accordance with section 41 of The Public Health Act. Certifications previously issued to 73 persons were returned. At the year's end 468 were in effect.

The various meetings of the Provincial Board of Health were concerned with various other items throughout the entire field of public health. Some of these were: the sale of soft ice cream, the handling of perishable foods in transit, the disposal of D.D.T. and other potentially harmful pesticides, the updating of waste disposal grounds throughout the Province to the landfill standards required by the Regulations by January 1st, 1971, complaints concerning burning of garbage in waste disposal grounds, the processing of dead animals for animal food, the use of lagoons for animal waste, the fencing of lagoons, problems associated with the operation of feed lots and other animal keeping activities, glass washing in beverage rooms, the use of non-returnable soft drink bottles, the provision of laboratory facilities for the chemical analysis of water samples, the provision of lifeguards at bathing places and man-made beaches, the installation and use of microwave ovens and the authority of Local Boards of Health in the administration of Provincial Board of Health regulations.

In these and other matters the Board gave assistance and guidance to the various divisions of the Department of Health and to Local Health Authorities intended to provide higher standards of health for the citizens of the Province of Alberta.

## **LEGISLATION PASSED DURING THE YEAR**

### **The Alcoholism and Drug Abuse Act (Chapter 10)**

This Act came into force on July 1st, 1970. It established the Alberta Alcoholism and Drug Abuse Commission as a corporation independent from the Government but supported by public moneys. The Commission will assume the administration of certain treatment facilities presently operated by the Division of Alcoholism of the Department of Health.

### **The Cemeteries Act Amendment Act (Chapter 15)**

Section 2(b) is amended to clarify the definition of "cemetery".

Section 14a(2) is amended to permit the owner of a cemetery to reclaim unused burial sites subject to safeguards provided elsewhere in the section.

This Act came into force on April 15th, 1970.

### **The Chiropractic Profession Act Amendment Act (Chapter 18)**

Section 6 is amended by adding a new clause (g1) which, subject to the approval of the Lieutenant Governor in Council, gives the Association the right to set registration fees, annual fees or payment for any service provided by an officer of the Association.

Sections 11(1)(b) and 12(1)(d) are amended to reduce to two, the three ways of qualifying for registration, which means that an applicant who could formerly qualify by showing that he is a graduate of an approved college or by passing examinations set by the Chiropractic Appraisal Board of Alberta, will now have to do both.

Section 15(2) is amended by increasing the annual fee payable to the Association from \$200.00 to \$400.00.

This Act came into force on July 1st, 1970.

### **The Department of Health Act Amendment Act (Chapter 29)**

A new section 10a is added which provides for an agreement between the Minister of Health and the owner of a hospital or nursing home for the transfer, sale or lease of a Government-owned hospital to that owner, as well as the transfer of patients and employees.

This Act came into force on April 15th, 1970.

### **The Environment Conservation Act (Chapter 36)**

This new Act, cited as "The Environment Conservation Act" establishes a three-member Environment Conservation Authority which will be directly responsible to the Lieutenant Governor in Council. The Authority will be empowered to investigate, study and hold public hearings on such matters as pollution, conservation and management of natural resources. It will maintain a continuous review of government policies and programs and will advise the Government as to the best means to achieve co-ordination of policy and action in the field of environment control and management of natural resources.

The present Conservation and Utilization Committee under The Utilization of Lands and Forests Act is continued under this Act and The Utilization of Lands and Forests Act is repealed. Provision is also made for the appointment of public advisory committees in environment conservation.

This Act came into force on July 1st, 1970.

### **The Marriage Act Amendment Act (Chapter 73)**

Section 9(1) is amended to permit the use of witnesses at a marriage ceremony who are "credible" but not necessarily adult.

Section 19 is amended by adding a new subsection (3) which allows a judge to give consent to the marriage of a minor when the consent of one or both parents cannot be obtained.

This Act came into force on April 15th, 1970.

### **The Medical Services Research Foundation Act (Chapter 74)**

This new Act, cited as "The Medical Services Research Foundation Act" incorporates the Medical Services Research Foundation of Alberta which will assume the assets and liabilities of the existing Alberta



Medical Research and Education Foundation established in 1964. The new Foundation will receive the residual assets of Medical Services (Alberta) Incorporated in the event of the winding up of that Corporation. The Medical Services (Alberta) Incorporated Act is amended accordingly.

This Act came into force on July 1st, 1970.

#### **The Mental Health Act Amendment Act (Chapter 75)**

Section 2 is amended by adding a new clause (1) which defines "admitting officer".

Section 5(4) is amended to allow certification of a voluntary patient, whether or not the patient has asked for his discharge.

Section 6(2) is amended to require prior approval of the superintendent when admitting a patient to hospital on medical certification.

Section 7(2) is amended to require prior oral or written approval of the superintendent when a patient is being admitted to hospital on one medical certificate.

Section 8(5) is amended and a new subsection (5a) is added to provide that when a person is taken into custody and a warrant for medical examination is necessary, prior oral or written approval of the superintendent of the hospital to which admittance is intended is required.

Section 15(7) is amended to allow for the appointment of legal counsel to assist the review panel.

This Act came into force on April 15th, 1970.

#### **The Optometry Act, 1966 Amendment Act (Chapter 86)**

Section 5(1) is amended to allow the holding of the annual general meeting of the Association at any time during the year.

This Act came into force on April 15th, 1970.

#### **The Alberta Pharmaceutical Association Act Amendment Act (Chapter 88)**

Section 18 is amended by adding a new subsection (2a) which allows for the appointment of a deputy registrar who need not be a member of the council of the Association.

Section 21c is amended by adding a new subsection (1a) and section 21d(4) is amended, which deal with discipline proceedings before the council of the Association.

Section 30 is amended by striking out subsections (3) to (7), and all matters pertaining to pharmaceutical internes will now be dealt with by the regulations of the council of the Association.

This Act came into force on July 1st, 1970.

#### **The Public Health Act Amendment Act (Chapter 91)**

Section 2 is amended by striking out clause (r), which removes the definition of "Provincial Medical Officer of Health", as that office is being abolished and his functions transferred to the Deputy Minister of Health.

Sections 3, 4 and 5 are amended, which bring the constitution of the Provincial Board of Health up to date.

Sections 26, 28 and 29 are amended to change the references in this Act from "Provincial Medical Officer of Health" to "Deputy Minister of Health".

A new section 42b is added which deals with prohibition against sniffing intoxicating vapours.

This Act came into force on April 15th, 1970.

#### **The Radiation Protection Act (Chapter 97)**

This new Act, cited as "The Radiation Protection Act", provides for the registration, inspection and control of radiation installations and equipment to ensure the safety of both workers and patients. It is designed to operate in conjunction with The Radiological Technicians Act, and, therefore, certain consequential amendments have been made to this Act and also to The Public Health Act.

This Act came into force on July 1st, 1970.

#### **The Vital Statistics Act, 1959 Amendment Act (Chapter 112)**

Section 2(c) is amended by adding the words "columbarium as defined in The Cemeteries Act" to the definition of "cemetery".

Section 11(2) (b) is amended to permit the use of witnesses at a marriage ceremony who are "credible" but not necessarily adult.

Section 13, which deals with the registration of divorces and decrees of nullity of marriage, is deleted, since a central divorce registry for all of Canada has been established.

Section 14(6), which gives the authority to order a post-mortem examination to the Director of the Division of Vital Statistics, who agrees that this is a duty which should be in the hands of a coroner who is medically qualified, is deleted.

Section 18(2), which was intended to assist in locating unregistered deaths, is deleted, as this method proved to be unsatisfactory.

Section 21, which deals with police reports, is deleted, due to the large amount of work involved by police forces relative to the small amount of information that the Division of Vital Statistics could use.

Section 22(1) is amended to extend the "change of name" section to include the Northwest Territories or Yukon Territory.

Section 30 is amended by striking out subsections (12) to (15), which provided for searches of records in the possession of district registrars. District registrars do not have registrations in their possession long enough to make a valid search and it was, therefore, considered that this authority should be deleted.

Section 34 is amended by adding a new subsection (4), which states that no statutory declaration, record or statement is admissible in evidence to affect a presumption of legitimacy, nor may the Director or Acting Director be called upon to give evidence.

The following new sections are added which are self-explanatory:—

35a. No system of registrations of births, stillbirths, marriages and deaths shall be maintained or continued in Alberta other than authorized by this Act.

35b. No registration shall be made of a birth, stillbirth, marriage or death occurring outside Alberta.

35c. The Director may carry out any of the duties of the district registrar of any registration district.

This Act came into force on April 15th, 1970.

**DEPARTMENT OF HEALTH**  
**Revenue and Expenditure for Fiscal Year ending March 31, 1971**

	Expenditure	Revenue
2401 Administration - General .....	\$ 53,271.84	\$ —
2402 Administration - General .....	330,946.39	1,760,156.93
2403 Epidemiology .....	66,307.97	—
2405 Vital Statistics .....	165,797.24	282,446.40
2409 Civil Service Nurse .....	18,295.09	—
2410 Alcoholism .....	963,046.39	83,687.75
2411 Health Services - Extension Program .....	819,010.74	833,179.21
2414 Communicable Diseases .....	314,700.41	—
2415 Health Units and Grants for Public Health Services .....	2,347,255.04	242,426.63
2416 Municipal Nursing Service .....	193,756.96	81,792.21
2417 Dental Health Services .....	38,175.63	—
2418 Public Health Education .....	66,107.42	—
2422 Social Hygiene .....	247,488.94	77,576.00
2425 Environmental Health Services .....	781,137.90	231,485.05
2428 Industrial Health Services .....	156,671.22	—
2430 Medical Services .....	1,394,431.85	458,111.89
2431 Northern Alberta Health Services .....	20,776.39	—
2432 Alberta Health Care Insurance Act .....	7,577,521.47	5,521,657.42
2433 Insulin and Other Special Drugs .....	50,765.27	37,073.77
2436 Nursing Aides .....	521,958.52	23,021.62
2437 Laboratory and X-Ray School .....	49,873.91	30,000.00
2441 Medical Rehabilitation Services .....	69.58	9.70
2442 Cerebral Palsy Clinic .....	120,733.43	44,992.17
2444 Multiple Handicapped Program .....	95,983.56	18,341.21
2450 Cancer Hospitals Board .....	—	732,100.79
2478 Hospital Construction Grants .....	—	456,591.11
2479 Hospitalization - Nursing Homes .....	7,466,191.75	—
2480 Hospitalization - General .....	180,989,123.59	78,560,551.75
<b>Division of Tuberculosis Control</b>		
2455 Director's Office and Clinics .....	318,571.99	56,644.00
2456 Aberhart Memorial Sanatorium .....	1,231,814.54	716,013.24
2457 Baker Memorial Sanatorium, Calgary .....	1,707,051.41	797,818.29
<b>Division of Mental Health</b>		
2460 Community Psychiatric Services .....	1,021,636.38	136,858.26
2462 Director's Office and Guidance Clinics .....	114,801.25	—
2463 Alberta Hospital, Ponoka .....	4,639,699.49	581,294.10
2465 Alberta Hospital, Edmonton .....	6,008,726.83	642,234.30
2467 Rosehaven, Camrose .....	1,535,879.43	279,152.20
2468 Alberta Hospital, Claresholm .....	1,462,514.64	225,466.61
2469 Alberta Hospital, Raymond .....	195,476.23	39,802.65
2472 Emotionally Disturbed Children's Unit .....	89,599.71	1,716.00
2475 Alberta School Hospital, Red Deer .....	4,525,464.13	429,709.92
2477 Deerhome, Red Deer .....	4,460,774.54	414,046.66
	<u>\$232,161,409.07</u>	<u>\$ 93,795,957.24</u>
Total Expenditure - Health Department .....		\$232,161,409.07
Less Health Revenue .....		93,795,957.24
Net Expenditure - Department of Health .....		<u>\$138,365,451.83</u>

## Vital Statistics

The vital registrations during the year were as follows:

Births .....	31,967
Marriages .....	15,285
Deaths .....	10,112

The population for 1970 was 1,600,000 and, therefore, the following rates have been recorded:

	No. of Births	Birth Rate	No. of Marriages	Marriage Rate	No. of Deaths	Death Rate
1965 .....	32,664	22.5	11,209	7.7	9,534	6.6
1966 .....	30,592	20.9	11,879	8.1	9,677	6.6
1967 .....	30,691	20.6	12,903	8.7	9,523	6.4
1968 .....	30,149	19.8	13,640	8.9	9,963	6.5
1969 .....	30,855	19.8	14,846	9.5	9,921	6.4
1970 .....	31,967	20.0	15,285	9.6	10,112	6.3

On the whole these figures are good. Since 1954 there has been a gradual decrease in the birth rate, until 1969 when it remained the same as in 1968, and is up again slightly in 1970. The natural increase (excess of births over deaths) was 21,855.

## Alcoholism

With the passing of The Alcoholism and Drug Abuse Act, the Division of Alcoholism ceased to be part of the Department of Health as of July 1st, 1970 and became the core of the new Alberta Alcoholism and Drug Abuse Commission. The newly formed Commission will be reporting independently of the Department of Health.

## Rabies

Sixteen domestic and wild animals were found to be infected with rabies, beginning with a dog on January 5th, 1970. Prompt action by the Central Rabies Control Committee, chaired by Dr. J. G. O'Donoghue, Director of Veterinary Services, Department of Agriculture, and composed of representatives of the Departments of Health, Agriculture, Lands and Forests, and Municipal Affairs, the Federal Health of Animals Branch of the Department of Agriculture, R.C.M.P., Veterinarians and others, was taken and a plan formulated which brought the matter under control, although some carryover into 1971 occurred.

## Arthritis

It became Government policy to discontinue the program of Arthritic Services, effective March 31st, 1970. Patients' records, as well as any surplus medical supplies, were transferred to the Division of Medical Services and medications were dispensed to patients until all existing supplies were depleted.

## Epidemiology

This Division provides a centralized service to other Divisions of the Department and to other agencies related to the Department by assisting with the collection, processing and tabulation of statistical data and with the design and conduct of epidemiological studies.



Additional special studies commenced in 1969 include a study with the Division of Medical Services of congenital reduction deformities of the limbs, a continuation of a study with the Sturgeon Health Unit in relation to farm accidents and a study with the Chinook Health Unit of a local outbreak of measles.

The study of the health effects of air pollution continues into its third and final year.

### Environmental Health Services

The work of this Division, in control of air and water pollution, administration of provincial programs for the supervision of public waterworks and sewerage systems, refuse disposal systems, plumbing inspection and basic public health inspection, is reported in detail and shows a marked increase in volume.

The heightened interest of the general public in the "Environment" is evidenced by the investigation of many more complaints than usual, and participation of members of the Division in numerous public meetings and speaking engagements. A large amount of informative material was produced and made available to the public, and we are convinced that these efforts are well worthwhile.

### Tuberculosis Control

In spite of all efforts, the incidence of tuberculosis has remained on a plateau, not only in Alberta, but generally throughout Canada.

A total of 338 new cases and 40 re-activated cases were reported, as against 343 new cases and re-activated cases in 1939. More than 40% of the new cases reported in 1970 were in the northern half of the Province and reflect the endemic nature of the disease in the Metis and Indian population, and the fact that practically all the Metis and well over half the Indian population reside in northern Alberta.

The mass survey procedures of the Division continued to be carried out and service was given to a total of 296,888 persons.

### Aberhart Memorial Sanatorium

This sanatorium which served as the treatment centre for tuberculosis for Northern Alberta for 19 years became a part of the University of Alberta Hospital as of December 31st, 1970. It will be operated by the Board of the University of Alberta Hospital, making tuberculosis in Northern Alberta a part of the stream of general hospital treatment.

### Mental Health

I note with regret the retirement of Dr. A. R. Schrag on October 1st, 1970, after 25 years with the Department and six years as Director of the Division of Mental Health.

The Division through its hospitals for mental illness and mental retardation and its guidance clinics continued to provide service to that segment of the population requiring treatment and care services that, seemingly, for various reasons, could not be effectively provided in any other setting or manner. Rehabilitation programs, of various kinds, were emphasized and increased in scope. The demand for hospital care and training of mental retardates continued at a high level.

The new Infirmary Building at the Alberta Hospital, Edmonton, was scheduled to open in the early part of 1971 and, as a result, treatment of geriatric and physically ill patients will be enhanced.

Bursary assistance was provided through professional training grants to six persons taking training in Social Work, four in Psychology, and 11 physicians taking specialty training in Psychiatry.

Several research projects were undertaken and these are enumerated in the Division report.

The capacities and number of patients in residence as of December 31st were as follows:

Hospital	Capacity	Patients in Residence
<b>ACTIVE TREATMENT MENTAL HOSPITALS</b>		
Alberta Hospital, Edmonton .....	900	846 (1)
Alberta Hospital, Ponoka .....	770	693 (2)
<b>CONTINUED TREATMENT HOSPITALS</b>		
Alberta Hospital, Claresholm .....	350	393 (3)
Alberta Hospital, Raymond .....	70	73 (4)
Rosehaven, Camrose .....	350	335
<b>FACILITIES FOR THE MENTALLY RETARDED</b>		
Alberta School Hospital, Red Deer .....	970	792 (5)
Deerhome, Red Deer .....	1,141	1,214 (6)
<b>EMOTIONALLY DISTURBED CHILDREN'S UNIT</b>		
Linden House, Red Deer .....	14	8 (7)
<b>Total .....</b>	<b>4,565</b>	<b>4,354</b>

On leave or otherwise absent:

(1) 145; (2) 79; (3) six; (4) three; (5) 223; (6) 113; (7) five

### Hospital Services

For information regarding the Alberta hospitalization program, it will be necessary to refer to the 1970 Annual Report issued by the Hospital Services Section of this Department.

### Alberta Health Care Insurance Commission

This Commission came into being on July 1st, 1969. Therefore, this report will carry no information concerning what was formerly the Alberta Health Plan.

### Professional and Sundry Acts

In regard to the subject of Professional and Sundry Acts, the Minister of Health is charged with the Administration of the following:

The Alberta Pharmaceutical Association Act  
 The Alberta Registered Dietitians Association Act  
 The Chartered Physiotherapists Act  
 The Chiropractic Act  
 The Dental Association Act  
 The Dental Auxiliaries Act  
 The Dental Technicians Act  
 The Medical Profession Act  
 The Naturopathy Act  
 The Nursing Aides Act  
 The Ophthalmic Dispensers Act  
 The Optometry Act  
 The Podiatry Act  
 The Psychiatric Nurses Association Act  
 The Psychologists Act  
 The Radiological Technicians Act  
 The Registered Nurses Act  
 The Veterinary Surgeons Act

With reference to The Podiatry Act, The Optometry Act and The Ophthalmic Dispensers Act, Boards of Examiners have been established by the Government in order to license all members who desire to practise in Alberta. Pursuant to The Chiropractic Act and The Naturopathy Act, Appraisal Boards have been formed by the Government in order that members wishing to practise in Alberta can be "recorded" through the Government. Certified Nursing Aides must obtain a license from the Registrar, appointed through the Department of Health. Details relating to The Dental Technicians Act are covered in a separate report under Dental Health Services. With regard to the other Acts, membership is obtained through the various Associations established under each respective Act.

During the calendar year 1970, the Chiropractic Appraisal Board approved 40 applications while two were still under review, and four were rejected. The

Board of Examiners under The Optometry Act accepted nine applications, while two were still under review. The Board of Examiners under The Podiatry Act approved two applications. The Board under The Naturopathy Act did not review any applications during the year. The Ophthalmic Dispensers Examining Board awarded seven Certificates of Competency in Dispensing, rejected one candidate due to lack of experience, while nine other applications were still under review as of December 31st, 1970. Under the same Act, the Board approved three applications for a Special Certificate of Competency in Dispensing Contact Lenses, while rejecting one due to lack of experience.

Respectfully submitted,

P. B. Rose, M.D.,

Deputy Minister of Health and  
Social Development Institutions.

# DIVISION OF LOCAL HEALTH SERVICES

**W. Watt, M.B., Ch.B., D.P.H., Director**

The Division of Local Health Services is the main agency of the Department of Health which relates to Local Boards of Health, providing preventive public health services throughout the Province. The Division acts in an advisory capacity, providing consultant services to all Local Health Boards and their staff, and is also responsible for the payment of fiscal grants to Health Units and City Health Departments under The Health Unit Act, and to the Municipal Nursing Service under The Nursing Service Act. The Division is composed of the following branches, each of which has its own Director and its own fiscal appropriation.

1. Communicable Diseases
2. Health Units

3. Public Health Nursing, including Maternal & Child Health
4. Dental Health
5. Health Education and Nutrition Services.

The Director of the Division of Local Health Services serves also as the Director of the Branches of Communicable Diseases and Health Units. The Public Health Nursing Branch includes a Nursing Consultant in Maternal & Child Health and provides the administration for the Municipal Nursing Service. The Health Education Branch and Nutrition Services, while sharing a common fiscal appropriation, are separate branches, each with its own Director.



# COMMUNICABLE DISEASES

W. Watt, M.B., Ch.B., D.P.H., Director

The functions and responsibilities of the Communicable Diseases Branch of the Division of Local Health Services are summarized as follows:

- (1) The collection and transmission of information and compilation and evaluation of statistics, concerning the morbidity and mortality of communicable diseases;
- (2) The provision of consultant services to local health authorities on matters relating to the prevention and control of communicable diseases;
- (3) The direction or application of control measures against communicable diseases in areas administered by the Provincial Government which are outside the jurisdiction of Health Units;
- (4) The interpretation and distribution of Communicable Disease Regulations;
- (5) The transmission of surveillance orders for smallpox and cholera to local health authorities for attention;
- (6) The transmission of bacteriological, virological and serological reports;
- (7) The distribution of immunizing antigens and sera and supervision of the utilization of those in limited supply;
- (8) The appraisal of immunization programs and the publication of specific recommendations in relation to them.

## PARALYTIC POLIOMYELITIS

During the year 1970 no case of Paralytic Poliomyelitis was reported. This is now the sixth consecutive year in which no definite or confirmed cases of Paralytic Poliomyelitis have been diagnosed as occurring within the Province. The one case notified in 1967 is considered very doubtful, in that the diagnosis was based on clinical evidence only, was not confirmed by laboratory tests, and made a complete recovery in a very short period. This apparent eradication of a killing and crippling disease demonstrates the efficacy of the Provincial immunization program, employing both Salk and Sabin vaccines, when compared with the peak statistics of 1,399 cases and 109 deaths in 1953, and 201 cases with 11 deaths in 1960, ascribed to Poliomyelitis.

During the year two (2) cases of Paralytic Poliomyelitis were diagnosed in Canada, and twenty-eight (28) in the United States of America, indicating that this disease is under control but not eradicated. It is again felt necessary to advise that the present highly satisfactory status of complete freedom from Poliomyelitis infection in Alberta will only be retained if the majority of residents maintain their immune status through regular reinforcing immunization. During the year, two residents died from late effects of Paralytic Poliomyelitis which they had contracted many years before in previous epidemics.

## VIRAL OR ASEPTIC MENINGITIS

There were 10 cases of Meningitis (Viral or Aseptic) reported during 1970, a slight increase over the 7 cases reported in 1969. For the past few years, the reported incidence of Meningitis due to viral infections has been low and, as in past years, laboratory investigation often failed to isolate a specific type of virus.

## TYPHOID FEVER

In 1970 a total of 4 cases of Typhoid Fever was reported occurring within the Province. Although the cases occurred separately and were not connected with any outbreak or epidemic, it serves to remind us that Typhoid Fever is endemic within the Province and can also be easily imported from abroad. No deaths occurred due to Typhoid Fever.

Investigation revealed that one case contracted the disease while on holiday in Mexico; two cases were students who imported the infection from Hong Kong; the fourth case was a seven-year-old resident who received the infection from a known local Typhoid carrier. All four cases recovered completely without becoming carriers, and it is interesting to note that the known carrier (of ten years' duration) underwent Gall Bladder surgery and has now been completely cleared of the Typhoid carrier state.

Three carriers were also discovered during the year — one being an immigrant from Mexico; another, a very elderly female resident of the Province (probably of 30 years' duration); and the third, a young female immigrant from Britain suffering from a Typhoid infection of the knee joint.

The ease with which Typhoid Fever infection can be imported into the Province by modern jet-air transportation has been amply demonstrated during 1970, and health authorities must be continually alert to discover imported cases, and prevent possible outbreaks.

## DIPHTHERIA

During 1970, the widespread prevalence of Diphtheria infection has continued to be a source of concern to the health authorities, and the increased incidence of the past four years has continued. A total of 23 cases of Diphtheria was diagnosed by combined clinical and laboratory findings, and the follow-up investigations also brought to light a total of 140 Diphtheria carriers. No fatalities were recorded—the last death from Diphtheria occurring in 1966.

As was noted in the Annual Report for 1969, the infections seem to be occurring almost totally in the northern part of the Province. Of the above reported 23 cases and 140 carriers of Diphtheria, only 4 cases and 3 carriers occurred south of Edmonton.

Diphtheria infection is occurring largely among the native Indian-Metis population in the northern part of the Province, or in areas where the Indian-Metis population is predominantly heavy. Many of the carriers are noted to be suffering from Diphtheria

infected skin lesions, and discharging suppurative ear infections, and this would appear to be the reservoir and the source of many of the Diphtheria cases. The investigations of the last three years indicate that Diphtheria is presently occurring as a disease of poor or faulty social hygiene, rather than the acute infectious upper respiratory disease of past decades. Over the last few years, local health authorities have engaged in full scale Diphtheria immunization in an effort to better control the infection, and although these efforts may have prevented large outbreaks, the incidence of Diphtheria infection remains high, indicating a rather heavy latent infection throughout the northern part of the Province.

The continued presence and prevalence of Diphtheria infection in the community should remind each resident of the need for frequent and continued immunization at the young age levels.

### MEASLES

There appears to have been an epidemic year or cycle for Measles on the North American continent in 1970, with the number of reported cases doubling in both the United States and Canada. The Province of Alberta also experienced a similar epidemic cycle. In 1969 the reported number of Measles cases had been reduced to 433. However, the incidence of Measles markedly increased in 1970, ending with a total of 5,227 cases notified, and 5 deaths ascribed to Measles. The Province introduced a Measles Immunization Program in 1966, extending it to cover all children up to the age of school entry. For the four-year period 1966 to 1969, both killed Measles and live Measles vaccines were provided. In May 1970, the use of killed Measles vaccine was discontinued, and the program continued, using a new live attenuated Measles vaccine. It appeared that the Measles Immunization Program had already effected a reduction in the incidence of the disease, and it probably had, since the great majority of notified cases had not been immunized, or were older children who had started school before the program commenced. It is anticipated that, with this Measles cycle having affected many of the non-immunized and older children, the incidence will be sharply reduced during 1971, and the continued Measles immunization will likely prevent another cycle appearing, to the same extent, in future years. It was noted that all of the five children who died from Measles infection suffered from other disabilities, such as severe mental retardation, malnutrition, epilepsy and asthma.

### STREPTOCOCCAL INFECTIONS

The incidence of Streptococcal infections (Scarlet Fever and Streptococcal Sore Throat) showed a slight increase to 1,280 cases reported in 1970 as against the previous low of 986 cases reported in 1969. The prevalence of Streptococcal infections in 1970 would appear to be similar to that experienced throughout most of the sixties, although it is considerably below the peak reporting of 2,143 cases in 1968 (See Table 6).

### INFECTIOUS HEPATITIS

The incidence of this important infectious disease continues to rise, and during 1970 a total of 1,524 cases was reported, a slight increase over the 1,425

cases notified in 1969. Table 6 indicates a continuous rise in the number of cases reported since 1966; while Table 2, outlining the distribution across the Province, indicates a concentration of infection in the Calgary area, and a preponderance of infection in the northern part of the Province.

The number of cases of Serum Hepatitis reported increased from 2 cases in 1969 to 6 cases in 1970. Although it may be very difficult to distinguish between Infectious Hepatitis and Serum Hepatitis, the latter is frequently associated with self-administration of narcotic and hallucinogenic drugs and the commune type living of certain segments of the population. The small number of cases notified as Serum Hepatitis would suggest we have avoided, so far, the "epidemics" experienced in some other areas of Canada and the United States, associated with abuse and self-administration of certain drugs.

Recent research in Infectious Hepatitis has been rather encouraging with the finding of antigens which seem to be closely associated with the organisms responsible for both Infectious and Serum Hepatitis. Until the causative organism, probably a virus, is isolated, no preventive vaccines can be made available. Currently, some degree of protection can be conferred by immune serum globulin which is provided free, as part of the Provincial Immunization Program, for all household and family contacts of diagnosed cases.

### RABIES

On January 5, 1970, a dog in the City of Edmonton was discovered to be rabid. Investigation proved that the source of infection could be traced to possible contact with a rabid animal while the family had been on holidays in the Province of Saskatchewan. This was the first rabid animal diagnosed in the Province of Alberta for more than fifteen years, and it further alerted the Provincial Central Rabies Control Committee who, for several years, had been following the spread of Rabies across the Provinces of Manitoba and Saskatchewan towards Alberta. Preparations were made, therefore, to meet and combat a possible extension of Rabies infection into the Province of Alberta.

On October 13, another dog was discovered, positive for Rabies, in the Caroline area, and this was immediately followed by the finding of a number of rabid coyotes and domestic animals in the central area of the Province, and along the border with Saskatchewan. By the end of the year a total of 16 animals, comprising 5 dogs, 5 coyotes, 4 cattle, 1 cat and 1 pig, had been discovered, suffering from Rabies infection. In 1970 the Central Rabies Control Committee instituted the Provincial Rabies Control Program, aimed at prevention of extension of Rabies infection across the border from neighbouring Provinces, while actively combating any Rabies infection which appeared within the Province. This, of necessity, must be a prolonged program; but, if successful, the results in reducing Rabies prevalence may appear in two or three years. The Central Rabies Control Committee is a multi-discipline organization involving Federal, Provincial and Municipal Governments, as well as other agencies such as University, Veterinary Association, etc. Due to human involvement and accidental expo-



sure of residents, the Department of Health is deeply involved in the control program.

Because of exposure to these confirmed rabid animals and other suspect animals, approximately 60 residents were provided with Post-Exposure Rabies Vaccine and/or Rabies Antiserum. As the Rabies infection spread, 8 Rabies Vaccine Depots were opened at Health Units and the two City Health Departments to make vaccine widely available to exposed residents, and the Provincial stock of Rabies Antiserum, Rabies Vaccine (Duck Embryo) and Rabies Vaccine (Semple —Nervous Tissue Origin) was increased. As the Central Rabies Control Committee developed the Provincial wildlife vector control and depopulation program, it was decided to safeguard, through immunization, a small group of residents actively engaged in the control program, or who could be classed as being at "high risk" because of being called upon to handle known or suspect rabid animals. Accordingly, the Department of Health organized through the Health Units and City Health Departments, a new program of Pre-Exposure Rabies Immunization, using the new Connaught Tissue Culture Rabies Vaccine, and made it available to approximately 2,000 residents in the following categories: all veterinarians and assistants; University laboratory personnel; Federal Control Officers, including laboratory and field R.C.M.P. Officers; Municipal Police Officers; Provincial Agricultural Officers; Department of Agriculture and Municipal Pest Control Officers; Fish and Wildlife Officers; Staff of dog pounds, S.P.C.A., Zoos and animal museums, etc. This new Pre-Exposure Rabies immunization is now under way. It is anticipated that Rabies infection in wildlife will increase during the coming year until the Vector Control Program begins to take effect. In the meantime, each biting or contact exposure of human residents will have to be thoroughly investigated, assessed, and where necessary, attempts made to safeguard the person with Post-Exposure Rabies Vaccine.

### LEPROSY

One case of Leprosy was detected in the Province in 1970. The case occurred in an immigrant who came to Alberta from India, via Great Britain. Treatment was instituted at one of the hospitals and was continued at home when the condition was considered no longer infectious. The patient, however, decided to return to Great Britain, making continued surveillance of himself and family unnecessary.

### RUBELLA

There has been an increase in Rubella (German Measles) infection in 1970, with 3,188 cases being reported as against 1,223 cases in 1969.

Rubella infection, like Measles, tends to occur in periodic cycles or epidemic waves, and for Rubella the epidemic cycle approximates 6 to 7 years. In 1953 a peak incidence of 4,165 cases was notified. The next peaks were reached with 8,676 cases notified in 1957, and 12,678 cases in 1964. It was anticipated that the next peak would fall in 1970 or 1971, and as noted above, there has been a very considerable increase in Rubella infection in 1970. However, since many of the cases occurred in the latter part of 1970, it is likely this high incidence will be extended to 1971, so that

1971 will appear to be the peak incidence year. A fall in incidence should be expected late in 1971, with a very much lower incidence of infection in 1972.

Rubella, or German Measles, is a mild infection and usually tends to be insignificant to the individual infected. It has been proved, however, that the virus of Rubella can cause congenital deformities and defects in the developing unborn child, when a pregnant mother contracts the disease, especially in the first three months of pregnancy.

In 1970 a new live attenuated Rubella virus vaccine was licensed by the Federal Food & Drug Directorate for Canada, and at the end of the year this new vaccine became available for mass immunization. However, because of uncertainties surrounding the new vaccine in regard to its transference from one person to another, the length of time it might confer immunity, the effect it might have on a child if accidentally given to a pregnant mother, etc. it was decided by all Provinces that this new vaccine could only be given on a selective basis. A selective live Rubella vaccine immunization program was approved for the Province of Alberta as follows:

1. Live Rubella virus vaccine would be available to the Public Health Service (Health Units and City Health Departments), and to all physicians of the Province for the immunization of *girls*, aged 12 years *only*.
2. Live Rubella virus vaccine would be made available to physicians *only* for the immunization of adult females who are proved susceptible following blood serology tests, and especially to adult females considered to be at high risk because of work exposure, e.g. in hospital nurseries or paediatric service.

This program commenced towards the end of 1970 and will be continued in an effort to protect susceptible females. It will be under continuous review as more study and survey information becomes available, especially in regard to the safety factors of the vaccine.

### SALMONELLA INFECTIONS

Salmonella infections, often responsible for acute gastroenteritis and occasionally associated with food poisoning outbreaks, occur fairly extensively on the North American continent. The incidence of Salmonella infections has shown a gradual increase in Canada and the Province of Alberta, and since this infection can be passed from person to person, and is frequently associated with domestic animals and poultry, the predominant source is usually food. In 1970, a Provincial Salmonella Surveillance Service was initiated by the Provincial Laboratory, and a committee formed consisting of members from many disciplines and agencies —Provincial Health and Agriculture, Federal Health of Animals and Drug Directorate, and industry. It is hoped by investigation, study and survey, that infections may be correlated and sources brought to light, so that through control, education and better management related to food handling, food preparation and food service and practices, some reduction in the prevalence of this infection can be attained. This is a long-term co-operative project, and the Committee expects gradual results over a period of years.



### TETANUS

In 1970 one classical case of Tetanus occurred in a farmer who stepped on a rusty nail. When the condition was initially diagnosed, the patient was transferred to a large hospital in Edmonton where, after a period of continuous intensive care lasting over one month, he made a complete recovery.

### IMMUNIZATION

As in past years, a high level of immunization has been maintained across the Province by Health Units and City Health Departments. This is especially true in regards to preschool and school children, where very high levels of immunization are obtained through Infant and Baby Clinics and School Health Services, against Smallpox, Diphtheria, Whooping Cough, Tetanus, Poliomyelitis and Measles. Extra efforts have been made to continue or raise the level of immunity against Diphtheria, because of the presence of latent Diphtheria infection in the Province.

As mentioned above, two new selective immunization programs were instituted at the end of the year against Rabies and Rubella (German Measles), but it may take several years, especially in the case of Rubella, before results can be obtained. In December of 1970, the Canadian Red Cross Society advised of the discontinuance of a program for the provision of immune serum globulin to persons affected with hypogammaglobulinaemia. The Provincial Government reviewed the matter, and advised and approved the continuance of the provision of immune serum globulin, through the Department of Health, as a preventive measure to combat infection in persons suffering from hypogammaglobulinaemia. This addition to the immunization schedule will come into effect in January 1971.

The large stock of immunization products provided for the residents of the Province by the Provincial Government is held at the Provincial Laboratory and then distributed on a regular basis to all Health Units and City Health Departments. The value of vaccines, sera and biologicals used in this service in 1970 amounted to approximately \$280,000.00.

TABLE 1  
NUMBER OF CASES OF COMMUNICABLE DISEASES  
REPORTED IN THE YEARS 1969 AND 1970

	1969	1970
Brucellosis .....	—	—
Diarrhoea of the Newborn .....	6	8
Diphtheria .....	22	23
Dysentery:		
(a) Amoebic .....	1	1
(b) Bacillary .....	346	360
Encephalitis, infectious .....	—	—
Food Poisoning:		
(a) Staphylococcal .....	15	19
(b) Botulism, Clostridium .....	—	—
Hepatitis:		
(a) Infectious .....	1,425	1,524
(b) Serum .....	2	6
Leprosy .....	—	1
Malaria .....	1	2
Measles .....	433	5,227
Meningitis:		
(a) Due to poliovirus .....	—	—
(b) Due to Coxsackie virus .....	—	—
(c) Due to ECHO virus .....	—	—
(d) Other and unspecified .....	7	10
Meningococcal infections .....	16	21
Paratyphoid fever .....	—	2
Pertussis .....	34	102
Poliomyelitis, paralytic .....	—	—
Psittacosis .....	2	—
Puerperal Pyrexia .....	—	—
Q Fever .....	—	1
Rubella .....	1,223	3,188
Salmonella infections:		
(a) With Food .....	10	18
(b) Without Food .....	204	342
Scarlet fever and streptococcal sore throat .....	986	1,280
Tetanus .....	—	1
Trichinosis .....	—	—
Tuberculosis:		
(a) Pulmonary .....	289	264
(b) Other and unspecified .....	54	74
Tularemia .....	—	—
Typhoid Fever .....	—	4







## DEPARTMENT OF HEALTH

TABLE 3—Continued  
RATE (PER 100,000 POPULATION) BY HEALTH UNIT AND DISEASE, ALBERTA, 1970

DISEASE	HEALTH UNITS EXCLUDING CITIES																NOT IN HEALTH UNITS
	DRUMHELLER H.U.	EDSON H.U.	FOOTHILLS H.U.	GRANDE PRAIRIE H.U.	JASPER NATIONAL PARK H.U.	LEDUC-STRAITHCONA H.U.	MEDICINE HAT H.U.	MINBURN-VERMILION H.U.	MOUNT VIEW H.U.	NORTH EASTERN ALBERTA H.U.	PEACE RIVER H.U.	RED DEER H.U.	STONY PLAIN-LAC STE. ANNE H.U.	STURGEON H.U.	VEGREVILLE H.U.	WETOKA H.U.	
Diarrhoea of the Newborn .....	—	—	—	—	—	—	—	3.54	—	5.26	—	—	7.91	1.77	—	6.67	25.20
Diphtheria .....	—	11.87	—	—	—	—	—	—	—	36.83	16.00	—	—	3.53	3.48	6.67	107.08
Diphtheria Carrier State .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery: .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amoebic case .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bacillary .....	—	23.75	—	31.82	—	15.28	4.18	38.97	12.92	28.93	77.33	2.33	43.53	24.74	3.48	3.34	31.49
Food Poisoning: .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Staphylococcal .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hepatitis: .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Infectious .....	57.69	217.69	4.67	19.89	34.75	349.00	45.95	81.48	268.14	149.93	154.65	118.65	182.04	81.29	100.99	386.86	144.87
Serum .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.30
Leprosy .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles .....	147.83	463.09	449.21	155.12	451.70	267.45	764.41	24.80	293.98	155.20	186.65	153.55	269.10	341.08	268.15	66.70	705.47
Measles, viral or aseptic .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Meningococcal infections .....	—	—	4.67	3.98	—	2.55	4.18	—	—	—	2.67	—	3.96	1.77	3.48	—	—
Paratyphoid fever .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pertussis .....	10.82	—	—	—	—	12.74	8.35	7.09	—	—	2.67	9.31	7.91	22.97	—	—	—
Q Fever .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rubella .....	14.42	391.55	93.31	75.57	243.22	188.49	375.94	63.77	474.90	21.04	58.66	158.20	51.45	98.97	1006.44	386.86	188.06
Salmonella infections: .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With food .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without food .....	—	—	4.67	19.89	—	7.64	8.35	17.71	9.69	15.78	8.00	9.31	15.83	7.07	10.45	10.01	6.30
Scarlet Fever and .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Septic sore throat .....	3.61	419.55	4.67	15.91	—	152.83	213.03	382.61	67.84	89.43	82.66	81.43	31.66	24.74	156.71	166.75	314.94
Tetanus .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trichinosis .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Typhoid .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Typhoid Carrier State .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Population Denominator .....	27,735	25,265	21,434	**25,142	2,878	39,260	**23,940	28,227	30,954	38,017	37,504	**42,984	25,269	56,585	28,715	29,985	22,700

\*Indian Population Based on 1966 Census

\*\*Health Unit Figures Based on Population not including large Cities



TABLE 4  
COMMUNICABLE DISEASE CASES REPORTED IN ALBERTA (1970) BY SEX, AGE AND PERIOD OF REPORTING

SEX		FOUR WEEKLY PERIODS										AGES						Cases in Armed Forces	Age not stated	60 and over	40 - 59	20 - 39	15 - 19	10 - 14	5 - 9	1 - 4	Under 1	Total	
Male	Female	1 - 4	5 - 8	9 - 12	13 - 16	17 - 20	21 - 24	25 - 28	29 - 32	33 - 36	37 - 40	41 - 44	45 - 48	49 - 52															
DYSENTERY - BACILLARY																													
Edmonton	14	15	3	3	1	2	2	1	1	1	6	1	2	4	2	6	2	2	2	3	1	1	—	—	—	—	—	29	
Calgary	27	28	—	1	5	1	1	5	1	5	9	4	2	32	6	12	17	6	5	6	2	2	1	—	—	—	55		
Lethbridge	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Red Deer	7	4	3	—	—	1	1	2	1	1	1	1	—	1	—	2	2	2	2	2	1	—	—	—	—	—	11		
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Rural	126	139	19	13	20	12	8	14	21	28	34	23	20	22	31	41	117	45	21	7	27	3	4	—	—	—	265		
Total	174	186	25	17	24	15	12	18	29	29	41	30	26	26	68	49	148	66	31	16	38	7	5	—	—	—	360		
FOOD POISONING - STAPHYLOCOCCAL																													
Edmonton	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Calgary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Lethbridge	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Red Deer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Rural	17	2	—	—	—	—	—	—	17	—	—	—	2	—	—	—	—	9	7	2	1	—	—	—	—	—	—	19	
Total	17	2	—	—	—	—	—	—	17	—	—	2	—	—	—	—	—	9	7	2	1	—	—	—	—	—	—	19	
HEPATITIS - INFECTIOUS																													
Edmonton	97	113	10	20	13	15	13	17	18	10	13	12	14	30	25	1	7	45	28	26	87	13	3	—	—	—	—	210	
Calgary	135	118	19	21	19	16	16	23	11	15	21	8	27	27	30	—	7	48	43	34	91	27	3	—	—	—	—	253	
Lethbridge	9	16	1	1	3	3	2	1	1	—	3	7	3	2	—	—	—	8	1	5	9	2	—	—	—	—	—	25	
Medicine Hat	2	2	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	4	
Red Deer	7	10	—	2	3	2	2	3	1	—	1	1	—	1	1	—	—	1	1	3	9	6	—	—	—	—	—	17	
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
Rural	520	490	109	124	78	91	79	82	54	73	62	44	61	66	87	3	78	271	221	97	231	84	25	—	—	—	—	1,010	
Total	773	751	139	170	117	127	112	126	86	99	100	72	105	128	143	4	92	374	294	165	432	132	31	—	—	—	—	1,524	
HEPATITIS - SERUM																													
Edmonton	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
Calgary	5	—	—	—	2	—	1	1	—	—	—	—	—	2	—	—	—	—	—	1	3	—	—	—	—	—	—	5	
Lethbridge	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Red Deer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Rural	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total	6	—	—	—	2	1	1	—	—	—	—	—	—	2	—	—	—	—	—	4	2	—	—	—	—	—	—	6	



TABLE 4  
COMMUNICABLE DISEASE CASES REPORTED IN ALBERTA (1970) BY SEX, AGE AND PERIOD OF REPORTING

SEX		FOUR WEEKLY PERIODS												AGES							Cases in Armed Forces	Total			
		1 - 4	5 - 8	9 - 12	13 - 16	17 - 20	21 - 24	25 - 28	29 - 32	33 - 36	37 - 40	41 - 44	45 - 48	49 - 52	Under 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 39			40 - 59	60 and over	Age not stated
LEPROSY																									
Edmonton																									
Calgary																									
Lethbridge																									
Medicine Hat																									
Red Deer																									
Grande Prairie																									
Rural	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MALARIA																									
Edmonton																									
Calgary																									
Lethbridge																									
Medicine Hat																									
Red Deer																									
Grande Prairie																									
Rural	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
MEASLES																									
Edmonton	485	451	142	314	246	102	73	37	11	3	—	—	1	6	1	20	133	614	132	24	13	—	—	—	936
Calgary	560	590	114	176	180	199	181	141	77	4	1	30	5	23	19	12	143	833	154	4	4	—	—	—	1,150
Lethbridge	105	99	1	—	—	—	6	12	6	2	18	51	59	43	6	4	22	128	48	1	1	—	—	—	204
Medicine Hat	68	95	—	2	2	2	39	106	9	1	—	—	1	—	—	2	6	116	25	3	2	—	—	—	163
Red Deer	66	66	7	10	38	36	24	14	1	—	—	—	—	—	2	6	32	81	12	1	—	—	—	—	132
Grande Prairie	—	3	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	2	1	—	—	—	—	—	3
Rural	1,315	1,324	202	199	181	321	635	355	130	46	38	66	96	236	134	150	623	1,265	530	46	19	6	—	—	2,639
Total	2,599	2,628	466	701	647	660	958	666	234	56	57	147	162	309	164	194	968	3,039	902	79	39	6	—	—	5,227
MENINGITIS (OTHER AND UNSPECIFIED)																									
Edmonton																									
Calgary																									
Lethbridge																									
Medicine Hat																									
Red Deer																									
Grande Prairie																									
Rural	6	3	1	—	1	2	—	—	—	2	1	—	1	—	1	2	2	4	—	—	1	—	—	—	9
Total	7	3	1	—	1	2	—	—	—	2	1	—	2	—	1	2	2	4	—	—	2	—	—	—	10

TABLE 4

[illegible]

TABLE 4  
COMMUNICABLE DISEASE CASES REPORTED IN ALBERTA (1970) BY SEX, AGE AND PERIOD OF REPORTING

	SEX		FOUR WEEKLY PERIODS												AGES					Cases in Armed Forces	Total					
	Male	Female	1 - 4	5 - 8	9 - 12	13 - 16	17 - 20	21 - 24	25 - 28	29 - 32	33 - 36	37 - 40	41 - 44	45 - 48	49 - 52	Under 1	1 - 4	5 - 9	10 - 14			15 - 19	20 - 39	40 - 59	60 and over	Age not stated
RUBELLA																										
Edmonton	235	245	64	101	78	42	75	57	9	11	3	15	4	10	11	23	60	183	115	69	26	4	—	—	—	479
Calgary	337	423	65	53	86	94	111	72	56	87	7	34	32	59	87	22	82	412	186	19	39	—	—	—	—	760
Lethbridge	38	48	18	24	4	2	8	3	3	5	1	9	3	5	1	7	21	43	11	2	2	—	—	—	—	86
Medicine Hat	36	43	12	18	4	3	7	22	4	1	—	—	3	3	2	5	11	34	18	7	4	—	—	—	—	79
Red Deer	15	31	6	5	4	7	2	3	—	3	6	2	1	1	6	5	15	17	6	—	2	1	—	—	—	46
Grande Prairie	5	3	—	—	—	—	—	2	—	1	1	—	—	—	4	1	2	824	349	76	62	7	—	—	—	8
Rural	805	924	170	159	185	120	191	120	78	52	29	28	82	293	222	121	290	824	349	76	62	7	—	—	—	1,730
Total	1,471	1,717	335	360	361	268	394	279	150	76	47	89	125	371	333	184	481	1,514	689	173	135	12	—	—	—	3,188
SALMONELLA INFECTIONS - WITH FOOD																										
Edmonton	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Calgary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lethbridge	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Deer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rural	10	7	1	—	—	—	1	—	2	—	2	3	1	4	3	7	5	1	2	—	2	—	—	—	—	17
Total	11	7	1	—	—	—	1	—	2	—	3	3	1	4	3	7	5	1	2	—	3	—	—	—	—	18
SALMONELLA INFECTIONS - WITHOUT FOOD																										
Edmonton	75	56	3	5	8	8	8	18	19	9	5	10	13	10	15	32	44	18	3	3	15	11	5	—	—	131
Calgary	47	35	1	3	5	2	8	14	14	7	9	2	9	6	2	12	22	10	8	4	19	6	1	—	—	82
Lethbridge	5	4	—	—	—	1	—	—	—	1	6	—	—	1	—	2	4	1	—	—	1	1	—	—	—	9
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	1
Red Deer	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	3
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rural	50	66	24	4	13	8	7	8	11	7	6	6	4	4	14	44	26	12	7	4	12	9	2	—	—	116
Total	177	165	28	12	26	19	23	41	44	24	27	19	27	21	31	92	97	41	18	11	47	28	8	—	—	342
SCARLET FEVER AND STREPTOCOCCAL SORE THROAT																										
Edmonton	38	34	8	11	7	3	3	12	5	—	1	2	6	8	6	—	16	41	6	2	6	1	—	—	—	72
Calgary	73	72	3	13	15	8	3	12	4	4	—	4	24	29	26	—	26	79	27	6	6	1	—	—	—	145
Lethbridge	6	12	1	6	1	2	—	—	—	—	1	2	—	2	3	—	1	9	7	—	—	—	—	—	—	18
Medicine Hat	2	2	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2	1	2	—	—	—	—	—	4
Red Deer	1	2	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	1	—	1	—	—	—	—	—	3
Grande Prairie	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rural	484	554	104	93	56	36	53	47	29	25	35	83	115	135	227	14	124	373	238	90	152	37	10	—	—	1,038
Total	604	676	118	123	80	49	60	71	38	30	37	91	145	175	263	14	167	505	279	101	165	39	10	—	—	1,280



TABLE 4  
COMMUNICABLE DISEASE CASES REPORTED IN ALBERTA (1970) BY SEX, AGE AND PERIOD OF REPORTING

[illegible]

TABLE 5  
DEATHS ASCRIBED TO COMMUNICABLE DISEASES  
FOR THE YEARS 1969 AND 1970

	1969		1970	
	Total Deaths	Rate per 100,000 of Population	Total Deaths	Rate per 100,000 of Population
Brucellosis .....	0	0.00	0	0.00
Diarrhoea of the Newborn .....	0	0.00	0	0.00
Diphtheria .....	0	0.00	0	0.00
Dysentery .....	0	0.00	0	0.00
Encephalitis .....	1	0.06	1	0.06
Hepatitis, Infectious .....	4	0.25	5	0.32
Measles .....	0	0.00	5	0.32
Meningococcal Infections .....	3	0.19	6	0.37
Pertussis .....	0	0.00	1	0.06
Poliomyelitis, Paralytic .....	0	0.00	0	0.00
Scarlet Fever and Streptococcal Sore Throat .....	1	0.06	1	0.06
Tuberculosis:				
(a) Pulmonary .....	12	0.75	11	0.69
(b) Other and Unspecified ....	8	0.50	1	0.06
Population of Alberta in 1969	1,561,000		Population of Alberta in 1970	
			1,600,000	

TABLE 6  
INCIDENCE OF SOME OF THE MORE SERIOUS COMMUNICABLE DISEASES FOR THE TEN-YEAR PERIOD, 1961 TO 1970

Date	Population	Total Cases	Total Deaths	Mortality Rate per 100,000 of Population
DIPHTHERIA				
1961 .....	1,331,944	19	0	0.0
1962 .....	1,370,000	10	0	0.0
1963 .....	1,405,000	29	3	0.2
1964 .....	1,432,000	1	0	0.0
1965 .....	1,451,000	3	0	0.0
1966 .....	1,463,203	2	1	0.1
1967 .....	1,490,000	9	0	0.0
1968 .....	1,526,000	15	0	0.0
1969 .....	1,561,000	22	0	0.0
1970 .....	1,600,000	23	0	0.0
INFECTIOUS HEPATITIS				
1961 .....	1,331,944	1,006	10	0.7
1962 .....	1,370,000	1,726	5	0.4
1963 .....	1,405,000	1,300	10	0.7
1964 .....	1,432,000	1,299	5	0.3
1965 .....	1,451,000	896	7	0.5
1966 .....	1,463,203	561	4	0.3
1967 .....	1,490,000	860	4	0.3
1968 .....	1,526,000	1,129	6	0.4
1969 .....	1,561,000	1,425	4	0.25
1970 .....	1,600,000	1,524	5	0.32

## MEASLES

1961 .....	1,331,944	6,309	4	0.3
1962 .....	1,370,000	10,185	5	0.4
1963 .....	1,405,000	8,535	10	0.7
1964 .....	1,432,000	7,860	9	0.6
1965 .....	1,451,000	4,100	6	0.5
1966 .....	1,463,203	6,720	4	0.3
1967 .....	1,490,000	3,008	6	0.4
1968 .....	1,526,000	594	0	0.0
1969 .....	1,561,000	433	0	0.0
1970 .....	1,600,000	5,227	5	0.32

## PERTUSSIS

1961 .....	1,331,944	315	1	0.1
1962 .....	1,370,000	980	1	0.1
1963 .....	1,405,000	954	2	0.1
1964 .....	1,432,000	281	3	0.2
1965 .....	1,451,000	241	0	0.0
1966 .....	1,463,203	252	0	0.0
1967 .....	1,490,000	492	3	0.2
1968 .....	1,526,000	220	0	0.0
1969 .....	1,561,000	34	0	0.0
1970 .....	1,600,000	102	1	0.6

## POLIOMYELITIS, PARALYTIC

1961 .....	1,331,944	26	2	0.2
1962 .....	1,370,000	6	0	0.0
1963 .....	1,405,000	2	1	0.1
1964 .....	1,432,000	1	0	0.0
1965 .....	1,451,000	0	0	0.0
1966 .....	1,463,203	0	0	0.0
1967 .....	1,490,000	1	0	0.0
1968 .....	1,526,000	0	0	*0.0
1969 .....	1,561,000	0	0	0.0
1970 .....	1,600,000	0	0	*0.0

\*In 1968 one death occurred from late effects of poliomyelitis  
In 1970 two deaths occurred from late effects of poliomyelitis

## SCARLET FEVER AND STREPTOCOCCAL SORE THROAT

1961 .....	1,331,944	1,673	2	0.2
1962 .....	1,370,000	1,235	0	0.0
1963 .....	1,405,000	1,133	0	0.0
1964 .....	1,432,000	1,601	0	0.0
1965 .....	1,451,000	1,262	1	0.1
1966 .....	1,463,203	1,710	0	0.0
1967 .....	1,490,000	1,700	0	0.0
1968 .....	1,526,000	2,143	1	0.06
1969 .....	1,561,000	986	1	0.06
1970 .....	1,600,000	1,280	1	0.06

## TYPHOID FEVER

1961 .....	1,331,944	16	0	0.0
1962 .....	1,370,000	8	0	0.0
1963 .....	1,405,000	2	0	0.0
1964 .....	1,432,000	4	0	0.0
1965 .....	1,451,000	7	0	0.0
1966 .....	1,463,203	0	0	0.0
1967 .....	1,490,000	13	0	0.0
1968 .....	1,526,000	0	0	0.0
1969 .....	1,561,000	0	0	0.0
1970 .....	1,600,000	4	0	0.0

# HEALTH UNITS

W. Watt, M.B., Ch.B., D.P.H., Director

Health Unit Service commenced in the Province of Alberta in 1931, when two full-time Health Units were established in the Foothills and Red Deer areas, with financial assistance and encouragement from the Rockefeller Foundation. The main object of this project was to provide residents of rural areas of the province with preventive health services comparable to those available to the residents of the major cities. Although these two Health Units operated satisfactorily even after financial support was withdrawn by the Foundation, the number of Health Units did not grow substantially until 1951. In that year, The Health Unit Act was passed, and within a few years many local authorities had grouped together to develop Health Units under the provincial plan, and provide very necessary public health services to their residents.

Health Unit services include the prevention and control of communicable diseases including tuberculosis and the social diseases, the administration and distribution of vaccines and biologicals, and the provision of maternal and child health programs, school health services, public health inspection programs, mental health programs, health education and etcetera. Under the autonomy which prevails within each Health Unit, any public health program may be introduced to meet the local conditions of the area, when such is deemed necessary by the Local Board of Health. Under these conditions, many Health Units have introduced full-time or part-time dental health services into their general health programs.

The Department of Health, in addition to distributing grants and financial assistance to Health Units under the provisions of The Health Unit Act, makes available through the Division of Local Health Services, medical, dental, nursing, nutrition, and administration consulting services, health educational resource materials, in-service training programs and workshops, free distribution of vaccines and biologicals and professional training bursaries. Health Units also receive assistance and services from the Provincial Health Laboratories, the Division of Medical Services, Division of Tuberculosis Control, Division of Social Hygiene, Division of Mental Health, Division of Industrial Health Services and Division of Environmental Services.

There are now 25 Health Units, besides the cities of Calgary and Edmonton Health Departments, operating in the Province, providing preventive public health services to almost the entire population of Alberta. In the Northern part of the Province, there still remain some sparsely populated areas, not served by organized health services. These Northern areas have been loosely grouped into one large service—The Northern Alberta Health Service, operated directly by the

Department of Health. Through this special service, inaugurated in 1966, and the Municipal Nursing Service, basic public health services, as well as emergency and minor nursing treatment are provided for the northern residents.

In December 1970, a Health Unit Conference was held at which Health Unit Board representatives, Medical Officers, Dental Officers and Department of Health personnel had an opportunity to discuss administrative procedures and technical policies.

Total financial grants from the Province to Health Units and City Health Departments for the fiscal year commencing April 1, 1970 amounted to \$2,299,917.24.

The following is a list of the Health Units, showing for each one, the location of its headquarters, the population figure upon which the grant from the Department of Health was based for the fiscal year commencing 1st April 1970, the approximate area and the population density.

Health Unit	Headquarters	Population	Area in Sq. Miles	Population Density
Alberta East Central	Stettler	51,387	7,300	7.04
Athabasca	Athabasca	22,252	5,720	2.55
Banff National Park	Banff	3,572	2,600	N/A
Barons-Eureka	Coaldale	26,421	3,000	8.81
Big Country	Hanna	14,338	8,800	1.63
Chief Mountain	Cardston	8,850	1,440	6.15
Chinook	Ft. McLeod	22,499	4,000	5.62
City of Lethbridge	Lethbridge	39,552	12	3296.00
County of Warner	Raymond	8,556	1,690	5.06
Drumheller	Drumheller	27,735	4,200	6.60
Edson	Edson	25,265	14,200	1.78
Foothills	High River	21,434	3,800	5.64
Grande Prairie	Grande Prairie	37,196	15,300	2.43
Jasper National Park	Jasper	2,878	4,200	N/A
Leduc-Strathcona	Edmonton	39,260	1,840	21.34
Medicine Hat	Medicine Hat	49,653	9,300	5.34
Minburn-Vermilion	Vermilion	28,227	5,000	5.65
Mount View	Calgary	30,954	5,800	5.34
North Eastern Alberta	St. Paul	38,017	6,100	6.23
Peace River	Peace River	37,504	26,100	1.44
Red Deer	Red Deer	69,891	9,400	7.44
Stony Plain-	Stony Plain	25,269	4,300	5.88
Lac Ste. Anne	St. Albert	56,585	6,800	8.32
Sturgeon	Vegreville	28,715	3,700	7.76
Vegreville	Wetaskiwin	29,985	3,100	9.67
Wetoka				

The categories of staff required to implement Health Unit services, and the number of positions in each category established by the end of 1970, with corresponding figures for the five preceding years, are shown in the following table.

Category of Staff	1970	1969	1968	1967	1966	1965
Medical Officers .....	21	24	22	25	25	24
Dental Officers .....	19	23	18	25	21	13
Public Health Nurses .....	167	159	161	157	151	143
Public Health Inspectors .....	36	38	36	37	36	37
Dental Auxiliaries .....	22	23	18	27	20	19
Dental Assistants .....	9	11	10	17	6	7
Stenographer-Technicians .....	78	67	76	67	60	57
Secretary-Treasurers .....	25	25	25	25	25	24

**NOTE:** We have six full-time dental programs and thirteen part-time programs in the 25 Health Units. Six Health Units offer no dental program while some units have more than one part-time dental officer.



# PUBLIC HEALTH NURSING

Janet C. Bailey, D.P.H.N., R.N., Director  
T. Beryl Ebert, B.Sc., R.N., Nursing Consultant

While the main purpose of the Public Health Nursing Branch remains much the same, new developments and changes take place each year. In general terms the main functions of this Branch are to provide a consultant public health nursing service to the health units and full responsibility for the operation of the Municipal Nursing Service.

## Availability of Nurses

Following the trend of the previous year the number of qualified public health nurses available for full-time positions increased and at the same time the number of vacancies declined. For most of the year in both the Edmonton and Calgary areas there were more qualified public health nurses available than there were openings for them. Some of the nurses were fortunate in obtaining other nursing positions but others found

their additional qualification a draw-back when applying for a general duty hospital position. In the rural areas there were fewer nursing staff changes and in some northern areas there were periods when qualified staff were not available for appointment.

## Professional Training Grants

In 1970 thirty nurses who received a professional training grant graduated with either a Bachelor of Science degree majoring in public health nursing or a diploma in public health nursing. Twenty-eight attended the University of Alberta, one attended the University of Ottawa and one McGill University. Following the course four were granted a deferment of return-in-service and six were unable to obtain positions which were recognized as suitable return-in-service.

TABLE 1  
DISTRIBUTION OF NURSES EMPLOYED IN HEALTH UNITS, CITY HEALTH DEPARTMENTS AND THE MUNICIPAL NURSING SERVICE IN RELATION TO BASIC QUALIFICATIONS AS AT DECEMBER 31, 1970

Service	With B.Sc. or Equivalent or Higher		With Diploma in P.H.Nsg.		Registered Nurses		Total
	No.	%	No.	%	No.	%	
Health Units .....	42	25.61	56	34.15	66	40.24	164
City of Edmonton .....	25	28.40	47	53.41	16	18.19	88
City of Calgary .....	33	39.29	49	58.33	2	2.38	84
Municipal Nurses .....	7	41.18	5	29.41	5	29.41	17
TOTAL .....	107		157		89		353

TABLE 2  
DISTRIBUTION OF NURSES IN RELATION TO POPULATION, AREA, AND POPULATION DENSITY IN HEALTH UNITS AND CITY HEALTH DEPARTMENTS ARRANGED IN ASCENDING ORDER OF POPULATION SIZE  
DECEMBER 1970

Local Health Authority	Popula- tion	Area in Square Miles	Popula- tion Density	Number of Nurses Senior Staff		Number Municipal Nurses	Nurse- Population Ratio
HEALTH UNITS							
Jasper National Park .....	2,878	4,200	0.68	—	1	—	1:2,878
Banff National Park .....	3,572	2,600	1.37	—	1	—	1:3,572**
County of Warner .....	8,556	1,690	5.06	1	1	—	1:4,278
Chief Mountain .....	8,850	1,440	6.15	1	1	—	1:4,425
Big Country .....	14,338	8,800	1.63	1	3	—	1:3,584
Foothills .....	21,434	3,800	5.64	1	3	—	1:5,358
Athabasca .....	22,252	8,720	2.55	1	6	2½	1:3,110*
Chinook .....	22,499	4,000	5.62	1	3	—	1:5,625
Edson .....	25,265	14,200	1.78	1	6½	—	1:3,368
Stony Plain-Lac Ste. Anne ....	25,269	4,300	5.88	1	5	—	1:4,211
Barons-Eureka .....	26,421	3,000	8.81	1	4½	—	1:4,804
Drumheller .....	27,735	4,200	6.60	1	4	—	1:5,547
Minburn-Vermilion .....	28,227	5,000	5.65	1	3½	—	1:6,273
Vegreville .....	28,715	3,700	7.76	1	6	—	1:4,102
Wetoka .....	29,985	3,100	9.67	1	5	—	1:4,997
Mount View .....	30,954	5,800	5.34	1	5	—	1:5,159
Grande Prairie .....	37,196	15,300	2.43	1	9½	1½	1:3,463*
Peace River .....	37,504	26,100	1.44	1	7½	2	1:4,099*
North Eastern Alberta .....	38,017	6,100	6.23	1	8	—	1:4,224
Leduc-Strathcona .....	39,260	1,840	21.34	1	8	—	1:4,362
City of Lethbridge .....	39,552	12	3,296.00	1	6	—	1:5,650
Medicine Hat .....	49,653	9,300	5.34	1	8	—	1:5,517
Alberta East Central .....	51,387	7,300	7.04	1	8½	—	1:5,409
Sturgeon .....	56,585	6,800	8.32	1	10	—	1:5,144
Red Deer .....	69,891	9,400	7.44	1	12	—	1:5,376
TOTAL .....	745,995						
Areas outside Health Units...	16,459					9	
CITIES							
Edmonton .....	422,418			Dir. Sup. Staff			
Calgary .....	385,436			2	9 79	—	1:4,671
				2	8 75	—	1:4,533
GRAND TOTAL .....	1,570,308						

\*Population reduced for ratio by subtracting population served by Municipal Nurses.

\*\*Part-time service.

There are nine nurses enrolled for the 1970-71 academic year. The reason for the reduced number is due mainly to the elimination of the diploma course in public health nursing which coincided with the beginning of the new two-year post-basic degree program at the University of Alberta.

### Public Health Nurses' Workshops

The Senior Nurses' annual workshop was held in Edmonton on the University of Alberta campus. This workshop is designed as in-service education for the senior nurses in the health units with the senior nursing staff of other agencies invited to attend. It was sponsored by the Department of Health and the Extension Department of the University of Alberta and funded by a professional training grant. Dr. Ruth B. Freeman, Professor of Public Health Administration at the Johns Hopkins School of Hygiene and Public Health in Baltimore, Maryland, was course leader. The theme for this course was "Challenge and Change".

In May a one-day workshop on Audiology and Audiometric Testing was given by the staff of the Division of Industrial Health Services. Nineteen nurses attended from the health units in the northern part of the Province. It is planned to have further workshops in other areas.

Two three-day workshops on Community Psychiatric Nursing were held at Alberta Hospital, Edmonton, the first in April for public health nurses from the health agencies served by this hospital and one in November for public health nurses from the southern part of the Province. As the material presented was in preparation for the development of programs for follow-up of psychiatric patients in the community, the sixty public health nurses who attended showed keen interest in all aspects of the workshops.

### Maternal and Child Health

Consultant service for public health nursing programs continued to be available to public health nurses and medical officers and to interested persons or groups. The Nursing Consultant visited eleven health units and municipal nursing services and in five of the health units all sub-offices were visited. While visiting the areas the Nursing Consultant also discussed with the senior hospital nursing staff possible improvements in the methods of referral of patients to community health services and ways of improving liaison between hospital and public health nurses. Workshops on developmental testing and on prenatal teaching methods were held in six centres.

Prenatal classes are being given in many centres in Alberta in both urban and rural centres; they are well received by both patients and their attending physicians and a general increase in attendance at the classes has been evident. School health programs are undergoing modification or are being reduced in many centres in order to provide more effective service. Special clinics for three or four year old children are offered in many areas. Developmental testing of infants and preschoolers has been added to some public health programs with a view of detecting developmental lags earlier.

In addition to the consultant service given to the public health agencies, talks were given to students at

the School of Nursing of the University of Alberta, the Royal Alexandra Hospital School of Nursing and the classes enrolled for the Civil Defence course. Participation continued on the National Maternal and Child Health Advisory Committee, the Alberta Perinatal Mortality Committee and the Poison Control Advisory Committee.

In November the third edition of the Manual of Related Services was completed and distributed to over 200 official and voluntary agencies. Since the first edition was compiled in 1965 this manual has provided excellent reference information to a wide variety of agencies. It describes in some detail the purpose and operation of all related health agencies functioning in Alberta.

### Municipal Nursing Service

In January 1970 the High Level and District Municipal Nursing Service was extended to include regular monthly visits to Rainbow Lake to provide public health nursing service only. Plans are going ahead to open a full-time nursing service there as medical services are no longer available. A sub-office of the High Level and District Service which reopened at Fort Vermilion in June is now located in a trailer on the grounds of the Fort Vermilion General Hospital. The trailer, which is provided by the Department of National Health and Welfare, is an improvement over the inadequate accommodation previously provided in the school. The nurse for this district lives at the Health Centre at La Crete and travels each day to the Fort Vermilion area. The Blueberry Mountain Municipal Nursing Service closed on March 31st and the public health nursing service was taken over by the staff of the Grande Prairie Health Unit. For some years there had been a steady decline in the use of the service for minor and emergency care as medical and hospital care became more accessible.

The Municipal Nurses continue to provide emergency and minor treatment service on a twenty-four hour day basis including weekends, but co-operation and consideration are required in all communities to prevent abuse of the service after hours. With the greater availability of hospital and medical care, the need to provide nursing care for home confinement has shown a marked decrease. This kind of change in the service requirement permits the use of the nurses' time for health education projects and preventive programs. The extended role of the Municipal Nurses continues to be well accepted in all the areas, not only by the patients but also by the physicians and hospital staff in adjacent communities. For seven months of the year there was a full complement of nursing staff for all districts. Clerical assistance was provided to assist the public health nurses at Fort McMurray and Wabasca.

During the year the following services were in operation:

Atikameg-Gift Lake	Kinuso
Blueberry Mountain	La Crete
Bonanza	Smith
Calling Lake	Wabasca
Fort McMurray and District	Wanham
High Level and District	Worsley

TABLE 3  
SUMMARY OF PUBLIC HEALTH SERVICES AND MINOR AND  
EMERGENCY SERVICES BY MUNICIPAL NURSES

Age Group	Public Health Services				Minor and Emergency Services			
	Office		Home		Office		Home	
	1970	1969	1970	1969	1970	1969	1970	1969
Infant .....	2,498	1,760	527	728	1,021	1,493	121	289
Preschool .....	3,156	2,538	762	1,031	2,228	3,164	252	504
School .....	1,408	1,382	815	1,037	3,446	3,588	224	318
Adult .....	3,382	4,242	1,579	2,114	6,042	7,616	629	937
Geriatric .....	127	161	213	336	314	316	100	173
	10,571	10,083	3,896	5,246	13,051	16,177	1,326	2,221

No. of patients referred for medical or hospital care .....	1970	1969
No. accidents attended .....	1,426	1,781
No. home confinements .....	228	626
	1	17



# DENTAL HEALTH SERVICES

A. T. Salter, D.M.D., D.D.P.H., Director

During the 1970 calendar year the preventive and educational dental health programs remained constant. Seven programs are directed by full-time dental officers of health; two possessing public health qualifications, and eleven are supervised by part-time dental officers; two of which have the dental public health diploma.

The Cities of Edmonton and Calgary have full-time dental preventive programs administered by dental health directors possessing public health qualifications.

## DENTAL HEALTH PROGRAMS

Health Units	Dental Officers		Dental Auxiliary- Hygienist	Dental Assistant
	Full-time	Part-time		
Athabasca	0	1 D.D.P.H.	2	0
Banff National Park	0	2	0	0
Barons-Eureka	1	0	1	1
City of Lethbridge	0	1	1	0
Drumheller	1	0	1	1
Edson	0	2	3	1
Grande Prairie	1	0	1	1
Jasper National Park	0	1	0	0
Leduc-Strathcona	0	1 D.D.P.H.	3	1
Medicine Hat	1	0	1	1
Minburn-Vermilion	0	1	0	0
Mount View	1 D.D.P.H.	0	2	1
North Eastern Alberta	0	1	2	0
Peace River	0	2	2	0
Red Deer	1	0	2	1
Stony Plain-				
Lac Ste. Anne	1 D.D.P.H.	0	1	1
Sturgeon	0	1	1	1
Vegreville	0	1	1	1
City of Calgary				
Health Dept.	1 D.D.P.H.	0	4	5
(4 Clinical)				
City of Edmonton				
Health Dept.	1 D.D.P.H.	0	8	9
(1 Clinical)				
	9	14	36	25
	(5 Clinical)			

Dr. A. Bene resigned as dental officer from the Athabasca Health Unit to accept a position with the Dental Faculty, University of Alberta. Dr. Bene also serves as supervising dentist, on a part-time basis for the Athabasca Health Unit.

Dr. A. Lizaire, formerly with the Saskatchewan Department of Health accepted the position of Dental Director, City of Edmonton Health Department.

Dr. F. D. Read, part-time dental officer for the Leduc-Strathcona Health Unit passed away suddenly. The contributions and dedication of Dr. Read to dental public health are duly acknowledged.

Dr. P. D. Finnigan, dental officer for Stony Plain-Lac Ste. Anne, serves as supervising dental officer on a part-time basis for the Leduc-Strathcona Health Unit.

The Chinook Health Unit was forced to terminate their program because of the resignation of their dental auxiliary/hygienist. The program will be re-established upon the availability of staff.

## Dental Auxiliary Student Recruitment

Recruitment for candidates to accept the professional training grant, dental auxiliary bursary training program, was undertaken via newspaper advertisements placed with the co-operation of the Publicity Bureau, Government of Alberta.

One hundred and seventy-seven requests for further information resulted from this endeavor.

Twenty-seven students applied for the Professional Training Grant and thirteen applicants were accepted for admission at the School of Dental Hygiene, University of Alberta, and were registered in the Dental Auxiliary Bursary Training Program. Two withdrew and changed faculties.

## Dental Auxiliary Training Program

PROFESSIONAL TRAINING GRANT PROJECT #608-2-188  
SUMMARY RETURN-IN-SERVICE AS AT DECEMBER 31st, 1970

	Graduated	Employed	
		Health Units	City Health Departments
Course #1 (1961-63)	19	4	0
Course #2 (1962-64)	18	0	1
Course #3 (1963-65)	10	2	1
Course #4 (1964-66)	8	2	0
Course #5 (1965-67)	4	0	0
Course #6 (1966-68)	11	4	1
Course #7 (1967-69)	10	4	3
Course #8 (1968-70)	10	7	3
Total	90	23	9

## Third-Year Student Summer Programs

Six third-year dental students were employed in five health units. The services rendered were those of prevention, education and topical fluoride therapy including dental inspections and counselling.

This program, undertaken with the cooperation of the Faculty of Dentistry, University of Alberta, provides a practical field experience for the undergraduate dental students and is also an available source of much needed dental manpower.

## Volunteer Dentist Program

Lac La Biche	January 26th - February 6th
High Level	March 2nd - March 6th
Lac La Biche	March 16th - March 25th
High Level	May 11th - May 16th
Kinuso	May 11th - May 19th
High Level	June 8th - June 13th
High Level	July 20th - July 25th
Consort	July 20th - July 31st
High Level	September 14th - September 18th
High Level	October 19th - October 23rd
High Level	November 9th - November 13th

Treatment and preventive dental services were made available to these areas for 79 working days equalling 660 operating hours and accommodating an average of twenty patients per clinic per day.

This program provides a much needed service to those rural communities of the province where dental treatment services are not readily available due to the lack of resident dentists.

Since the inauguration of this program in 1961, of making dental services available to rural communities upon request by a local responsible agency, one hundred and twenty-one private practice clinics have been undertaken by members of the Alberta Dental Association in cooperation with the Department of Health.

**Health Unit Conference, December 2nd, 3rd and 4th**

This conference was well attended by the dental officers of health. The combined meeting with the medical officers of health and board chairmen was a very successful one. The two-day meeting of the dental officers proved very rewarding and many topics were discussed with resulting resolutions being passed.

**Dental Health Seminars**

Under the sponsorship of Federal Health Grant Project #608-13-17 the Public Health Committee of the Alberta Dental Association in cooperation with the Provincial Department of Health held seminars in the Wetoka Health Unit.

During previous seminars the approach was to educate the students and make them aware of preventive methods they could personally undertake for better and continuing oral health and the necessity for regular visits to their dentists for necessary treatment and preventive dental services.

This year the approach was made to acquaint and educate the teachers to means and methods of presenting dental health education to their students within the

health curricula. It was felt by the clinicians that this could then become a continuing educational process.

This approach was enthusiastically received by the teachers, health unit personnel and community leaders.

**Oral Fluoride Program**

The oral fluoride program has continued within the non-fluoride areas of Alberta.

A total of 15,982 prescriptions were filled for the tablets and a total of 24,905 for the liquid. The utilization remains fairly constant in each age group when compared with 1969.

Thirty-seven communities with a population of 571,614 are served by thirty-one fluoride-adjusted water systems.

Thirty-five communities with a population of 35,499 are served by thirty-five water systems with a natural occurring fluoride content greater than 0.9 p.p.m.

Seventy-two communities with sixty-six piped water systems serve a population of 607,133 with fluoridated water.

**ORIGINAL/NEW AND REFILL PRESCRIPTIONS BY AGE GROUPS**

		Under 1 year		1 - 4 years		4 - 8 years		8 - 12 years		12 years plus	
TABLETS											
1966/67	19,811 Prescriptions .....	52		4,492		8,445		5,583		1,239	
		Orig.	Refill	Orig.	Refill	Orig.	Refill	Orig.	Refill	Orig.	Refill
	15,074 Original .....	33		3,537		6,335		4,235		934	
	4,737 Refill .....		19		955		2,110		1,348		305
1968	17,601 Prescriptions .....	2,488		5,113		6,293		2,975		732	
	9,753 Original .....	2,481		3,437		2,417		992		426	
	7,848 Refill .....		7		1,676		3,876		1,983		306
1969	*17,778 Prescriptions .....	7		3,580		7,878		5,091		1,222	
	9,700 Original .....	5		2,048		4,268		2,719		660	
	8,078 Refill .....		2		1,532		3,610		2,372		562
1970	15,982 Prescriptions .....	80		3,340		6,475		4,727		1,360	
	7,895 Original .....	67		1,701		3,135		2,351		641	
	8,087 Refill .....		13		1,639		3,340		2,376		719

\*Incorrect prescription figures reported for 1969 are corrected in this table.

**ORIGINAL/NEW AND REFILL PRESCRIPTIONS BY AGE GROUPS**

		Under 1 year		1 - 4 years		4 - 8 years		8 - 12 years		12 years plus	
LIQUID											
1966/67	21,313 Prescriptions .....	3,036		8,061		7,132		2,719		365	
		Orig.	Refill	Orig.	Refill	Orig.	Refill	Orig.	Refill	Orig.	Refill
	17,749 Original .....	2,792		6,821		5,676		2,179		281	
	3,564 Refill .....		244		1,240		1,456		540		84
1968	18,669 Prescriptions .....	3,048		6,419		6,325		2,420		457	
	12,165 Original .....	2,952		4,687		3,188		1,075		263	
	6,504 Refill .....		96		1,732		3,137		1,345		194
1969	*22,097 Prescriptions .....	6,651		7,668		5,166		2,367		245	
	13,550 Original .....	4,465		4,723		2,944		1,293		125	
	8,547 Refill .....		2,186		2,945		2,222		1,074		120
1970	24,905 Prescriptions .....	6,946		9,641		5,676		2,275		367	
	16,539 Original .....	5,097		6,474		3,447		1,314		207	
	8,366 Refill .....		1,849		3,167		2,229		961		160

\*Incorrect prescription figures reported for 1969 are corrected in this table.

## DEPARTMENT OF HEALTH

DISTRIBUTION OF DENTISTS IN RELATION TO POPULATION, AREA AND POPULATION DENSITY  
IN HEALTH UNITS AND CITY HEALTH DEPARTMENTS ARRANGED IN ASCENDING ORDER OF  
POPULATION SIZE

Local Health Authority	Population	Area in Square Miles	Population Density	No. of Dentists	Dentist/ Population Ratio
<b>HEALTH UNITS</b>					
Jasper National Park .....	2,878	4,200	0.68	1	1:2,878
Banff National Park .....	3,572	2,600	1.37	3	1:1,190
County of Warner .....	8,599	1,690	5.09	1	1:8,599
Chief Mountain .....	8,863	1,440	6.15	2	1:4,431
Big Country .....	14,333	8,800	1.63	1	1:14,333
Foothills .....	21,452	3,800	5.65	2	1:10,726
Athabasca .....	22,423	8,720	2.57	1	1:22,423
Chinook .....	22,785	4,000	5.70	5	1:5,557
Barons-Eureka .....	26,725	3,000	8.91	3	1:8,908
Edson .....	27,056	14,200	1.91	3	1:9,018
Stony Plain-Lac Ste. Anne .....	27,307	4,300	6.35	1	1:27,307
Drumheller .....	27,763	4,200	6.61	6	1:4,627
Minburn-Vermilion .....	28,389	5,000	5.68	6	1:4,731
Vegreville .....	28,723	3,700	7.76	2	1:14,361
Wetoka .....	30,158	3,100	9.72	6	1:5,026
Mount View .....	32,994	5,800	5.69	1	1:32,994
Peace River .....	37,643	26,100	1.44	5	1:7,528
Grande Prairie .....	38,445	15,300	2.51	8	1:4,805
North Eastern Alberta .....	38,712	6,100	6.35	4	1:9,678
City of Lethbridge .....	40,856	12	3,404.67	22	1:1,857
Leduc-Strathcona .....	44,499	1,840	24.18	9	1:4,944
Medicine Hat .....	49,812	9,300	5.36	11	1:4,528
Alberta East Central .....	51,261	7,300	7.02	12	1:4,271
Sturgeon .....	57,765	6,800	8.49	9	1:6,418
Red Deer .....	70,311	9,400	7.48	22	1:3,199
	763,324				
<b>CITIES</b>					
Calgary .....	398,034			163	1:2,441
Edmonton .....	435,503			244	1:1,784
Total .....	1,596,861			553	

COMMUNAL FLUORIDATION  
UP TO DECEMBER 31, 1970

Year Fluoridation Commenced	31 Communities With Fluoride- Adjusted Water Systems	6 Other Communities Substantially Supplied by These Systems	Population Served by These Water Systems
1962	Athabasca	—	1,829
1964	Barrhead	—	2,718
1961	Bonnyville	—	2,529
1968	Bow Island	—	1,165
1963	Coaldale	—	2,541
1969	Cold Lake (Medley)	—	1,242
1970	Cold Lake - C.F.B.	—	10,000
1959	Devon	—	1,398
1967	Drumheller	—	5,240
1967	Edmonton	—	453,566
	Redwater (1964); Sherwood Park (1967); Leduc, Beaumont, St. Albert, Fort Saskatchewan (1962)		
1958	Fairview	—	2,093
1969	Fort McMurray	—	6,132
1959	Grande Prairie	—	12,054
1968	Hanna	—	2,539
1969	Hays	—	100
1969	Hinton	—	4,461
1960	Innisfail	—	2,350
1964	Kinuso	—	376
1964	Mayerthorpe	—	1,042
1964	Milk River	—	861
1963	Peace River	—	5,384
1966	Picture Butte	—	1,013
1968	Pincher Creek	—	3,223
1968	Red Deer	—	26,907
1968	St. Paul	—	4,051
1963	Suffield-Ralston	—	2,000
1970	Taber	—	4,691
1968	Vegreville	—	3,776
1968	Wainwright- C.F.B. Camp	—	336
1968	Westlock	—	3,103
1965	Whitecourt	—	2,894
			571,614

The population on controlled fluoridation 571,614 is 47.9% of the population on piped water systems and 36.3% of the total population of Alberta.

The population on natural occurring fluoride (0.9 p.p.m.+) 35,499 is 2.9% of population on piped water systems.

A population of 607,113 equal to 38.5% of the total population are receiving the benefits of controlled and natural fluoride and represents 50.8% of the population on community water delivery systems.

Population of Alberta—1,576,549

Population on controlled fluoridation—571,614

Population on natural occurring fluoride—35,499

Population on piped water systems—1,194,062

(Population figures as established under the  
Alberta Assistance Act—1970)

**Fluoridation Plebiscites:**

Two fluoridation plebiscites were held in 1970.

Manning — passed fluoridation

Wainwright — passed fluoridation

Eight communities with a population of 16,631 are awaiting installation of fluoridation equipment.

Community	Population
Spirit River	1,133
Drayton Valley	3,471
Elk Point	774
Cardston	2,721
Grand Centre	2,075
Coleman	1,400
Manning	1,322
Town of Wainwright	3,735
	16,631

**Dental Technicians Board**

Three regular meetings were attended in the capacity of Secretary-Registrar. There were no examinations held for Registered Dental Technicians. The examinations are to be held during January, 1971.

There are 78 Registered Dental Technicians in Alberta.



# HEALTH EDUCATION SERVICES

**J. P. Matheson, Director**

The Health Education Branch was without a Director for the greater part of the year under review. With the appointment of a new Director, the balance of the year was mainly directed to a review of the central services provided by the Health Education Branch to provincial agencies.

The Branch of Public Health Education provides services through acting as consultants and advisors to other Health groups — such as Local Health Units, City Health Departments, Divisions of the Department of Health, and other health agencies, utilizing available Health Staff rather than attempting to become involved and carry programs and services of its own.

A new film catalogue was prepared for release to health agencies within the province. Preparation was made for an inventory, classification and cataloguing of all printed material and other visual aids.

Initial steps were taken to involve Local Health Units and other health agencies in discussions towards

the establishing of program priorities and projects over a several year period.

The Health Education Branch cooperated with the Poison Control Branch of the Division of Medical Services and the Division of Epidemiology in the preparing of a research proposal on accidental poisoning within the province in support of a Federal Health Research Grant. In this same context a meeting was successfully convened of representatives of the City of Edmonton Health Department, the Provincial Department of Health, Safety Council and the Pharmaceutical Association for the purpose of establishing a coordinating body for the further prevention and control of accidental poisoning.

A meeting of agencies concerned with the effects of smoking on health was convened. The result was the formation of the Inter-Agency Council on Smoking and Health with the principal purpose of determining and activating more effective methods of influencing the public on the health hazards of smoking.

# NUTRITION SERVICES

**Elva M. Perdue, B.Sc.(H.Ec.), B.Ed., Nutritionist**

While 1970 represented a year of expanding demands for consultant and educational service to both professional and lay groups, the limited staff of one nutritionist and one clerk-typist again precluded the extension of the basic program which is carried out from year to year. The nutrition consultant functioned in a manner similar to that stated in previous reports — that is, by providing consultant service to other disciplines, such as public health personnel, welfare workers, teachers, home economists and dietitians. In this way it is possible to spread our service over a wider area, and thus influence indirectly more people than could be reached through a program of direct service.

Our service is implemented through a number of different activities, and some developments that are of particular interest for this year are outlined to illustrate their scope.

## Consultant Services to Institutions

Nutrition Services continued to provide consultation and technical assistance to food service personnel in various types of institutions that do not have dietitians on staff. This comprised no mean item in the work of the nutritionist during the year. A total of 22 days, for example, was spent in the dietary departments of the provincial institutions at Camrose, Red Deer, Claresholm and Raymond, where the nutritionist provided consultant services and participated in in-service training of dietary personnel.

Small hospitals, nursing homes, senior citizens' homes, and colleges are other examples of institutions to which assistance has been given with menu planning, food purchasing, food sanitation and therapeutic diets. In addition to the usual services, at the request of personnel in the Nursing Homes Branch of the Hospitals Division, the nutritionist reviewed and prepared written reports this year on the menus planned for patients and staff in eight nursing homes. Occasionally, and again on request, follow-up visits were made.

Nutrition Services also provided information on child feeding to day care centres, nursery schools and kindergartens. Where necessary, assistance was given in planning and costing menus.

Nutrition Services continued to distribute standardized quantity recipes from a number of outside sources. Recipe cards from the Department of Fisheries, for instance, were again made available quarterly to small institutions in the province, as well as to the Alberta Hospital Association for distribution to its members.

## Consultant Service to Public Health Personnel

Much credit for the effectiveness of the nutrition education program is due to the efforts of the public health staff in the field. Their program includes the interpretation of nutrition information to the public as part of the preventive aspect of public health. Teaching of nutrition occurs in prenatal classes, child health conferences, the school counselling, and home visiting.

Nutrition Services has continued to provide both general and specific nutrition information in support of these programs in health units and city health departments. The subjects covered this year included general family nutrition, prenatal education, infant and child feeding, teen-age nutrition, food budgeting, and nutrition for the elderly.

At the request of the Dental Officer with the City of Edmonton Health Department, the nutritionist spent considerable time reviewing and making suggestions on the dental component of a caries prevention program.

A somewhat similar request for participation in a national testing program to determine the effectiveness of a new proposed food guide was received from the Department of Nutrition of the School of Hygiene, University of Toronto. Nutrition Services arranged with public health personnel in the City of Edmonton Health Department to have participants in prenatal classes evaluate the materials.

Inevitably, considerable time was also spent on researching specific nutrition information in professional journals for medical officers of health, dental officers, public health and industrial nurses.

## Co-operation With Other Government Departments And Agencies

Co-ordination of information, resources, and educational methods, with a view to extending the integration of nutrition services on a broad front, has been maintained with home economists, dietitians, and nutritionists in other government departments, as well as with those of voluntary agencies. For example, the nutritionist was again an active participant in the Edmonton Nutrition Committee. Informal meetings with nutritionists from official and voluntary agencies were held once a month to review current literature and discuss program plans. It is felt that this continuous interagency planning and evaluation prevents overlapping of services and promotes better use of available resources.

As a service to the Department of Social Development, the nutritionist again served on a committee with personnel from the Department of Agriculture to establish the food allowance scales for public assistance. The Department of Social Development also requested nutrition publications for use in training programs for their field staff.

The nutritionist co-operated with the nutritionist in the Alberta Region of Medical Services of the Department of National Health and Welfare in evaluating summer nutrition programs undertaken by students in Wabasca and Driftpile. These programs indicated that worthwhile nutrition programs for native people can be developed.

## Consultant Services to Individuals

Requests for practical and general nutrition information received directly from the public during office visits, by telephone and by correspondence in-

creased substantially during the year. There were over 200 enquiries from the public regarding many aspects of nutrition, and these were dealt with in whatever depth seemed to be indicated. Food budgeting continued to be of high priority, as did such things as eating habits of children, feeding of older people, overweight, packed lunches for school, industry, and walkathons, food enrichment, food additives, reference materials, and teaching aids.

In addition the nutritionist spends an increasing amount of time interpreting therapeutic diets prescribed in conjunction with medical treatment. Many of these requests come from individuals referred by doctors, public health nurses, industrial nurses, and social workers. During the year, 79 people requested information about special diets related to such conditions as celiac disease, allergies, phenylketonuria, gall bladder, diabetes, obesity, and peptic ulcer. The assistance given usually centers around menu planning, providing suitable recipes, and adapting the therapeutic diet to the home and work situations.

#### **Preparation and Evaluation Of Teaching Aids**

The prenatal score sheet, *Eat It! Score It!*, and the *Food Models To Color* were revised and reprinted. Also, a supply of the publications, *Canada's Food Guide*, *Good Eating With Canada's Food Guide*, *Healthful Eating*, and *Food Guide For The Older Person*, were purchased from the Department of Public Printing and Stationery in Ottawa. These were required to meet the increased number of requests, as these materials are extensively used in educational and public health programs.

Six issues of the bulletin, *Nutritionally Speaking*, were produced and distributed to a mailing list of 965 public health nurses, dental auxiliaries, teachers, social workers, home economists and dietitians. This mimeographed release is intended to provide information on recent advances and new teaching materials in the field of nutrition.

The selection of nutrition education materials is a continuing task. During the year various films, pamphlets, posters, etc., were previewed and evaluated for use in the province. Comments were also prepared for proposed publications, and suggestions were submitted for the revision of others.

#### **Dietary Training Courses**

Again in 1970, the nutritionist planned, directed, and participated in a five day dietary training program sponsored by the Alberta Hospital Association and the Southern Alberta Institute of Technology. The course was attended by 21 senior dietary personnel from 20 hospitals and nursing homes in Alberta. To supplement classroom instruction, 12 different teaching aids were designed and prepared by Nutrition Services for use in the course.

At the invitation of the Northwest Territories Hospital Association, the nutritionist and the Director of Dietetics at the Lethbridge Municipal Hospital, conducted a two-day workshop for dietary personnel from small hospitals in the Northwest Territories. It was held in Yellowknife in conjunction with the annual convention of the Northwest Territories Hospital Association.

#### **Miscellaneous**

The nutritionist as liaison officer for the Alberta area of Nutrition Canada, was involved in planning for the Alberta portion of the national nutrition survey which is sponsored by the Food and Drug Directorate of the Department of National Health and Welfare, in co-operation with the provincial department. Early in the year, a submission requesting that special interest groups in Alberta be included in the project was prepared for the National Co-ordinator of Nutrition Canada. In the latter part of 1970, the nutritionist was involved in making the preliminary arrangements for the accommodations for the survey clinics and personnel.

Liaison and consultant services were provided as usual to Schools of Technology, Community Colleges, Schools of Nursing, and Universities. In addition, seven presentations to interpret the role of community and public health nutrition were given to undergraduate and postgraduate students.

The nutritionist attended a two week nutrition seminar at Syracuse University in Syracuse, New York. This opportunity was professionally rewarding and was an effective means of keeping abreast of new developments in the field of nutrition.



# DIVISION OF MEDICAL SERVICES

C. L. Pearson, B.Sc., M.D., D.P.H., Director

The Division of Medical Services is the administrative structure of the Department of Health concerned with medical and para-medical treatment services. The branches of this Division are as follows:

1. Emergency Health Services
2. Special Handicapped Children's Programs
3. Registry for Handicapped Children and Adults
4. Cystic Fibrosis Program
5. Diabetic Treatment Program
6. Phenylketonuria Program
7. Rheumatic Fever Program
8. Emergency Air Ambulance Service
9. Poliomyelitis Treatment Program
10. Treatment Services for Social Service Recipients
11. Schools for Nursing Aides
12. Registry for Nursing Aides
13. Health Careers Recruitment Program
14. Laboratory and X-Ray School
15. Northern Alberta Health Services
16. Cerebral Palsy Clinic
17. Poison Control Service
18. Civil Service Nurse

In the administration of the various programs operating through the Division of Medical Services, the Division becomes involved with the following Acts: The Treatment Services Act, The Poliomyelitis Sufferers Act, The Nursing Aides Act, The Health Unit Act, The Public Health Act, The Medical Profession Act, The Nursing Service Act, The Civil Defence and Disaster Act, The Alberta Hospitals Act, The Homestead Lease Loan Act, The Motor Vehicle Accident Claims Act, The Chiropractic Profession Act, The Naturopathy Act, The Optometry Act, The Ophthalmic Dispensers Act, The Podiatry Act, The Social Development Act.

## EMERGENCY HEALTH SERVICES

This organization is responsible to the Minister of Health through the Division of Medical Services. Its functions are twofold:

1. To establish a system of Emergency Health Services throughout the province to meet all emergencies and the provision of emergency medical care.
2. To assist and advise all Active Treatment Hospitals, Auxiliary Hospitals, Nursing Homes and Alberta Hospitals in the province in the preparation of a disaster plan to meet with any disaster and to test the efficiency of this plan.

The Director, Alberta Emergency Health Services, is Dr. A. G. McLaren. Associated with him are an Assistant Director, who is a Pharmacist, one Nurse Consultant, one Stores Officer and one Clerk-Stenographer III.

The Emergency Health Services program of planning, orientation, and training continued to show favorable progress. Sixteen Hospital Disaster Exercises were held. Five Active Treatment Hospitals conducted

the initial exercise of their Disaster Plan. Three Auxiliary Hospitals initially exercised their plans. Eight Active Treatment Hospitals held full-scale repeat exercises. Included in this group was a new hospital which had replaced the original, necessitating the exercising of a completely revised disaster plan. A total of one-hundred Active Treatment Hospitals and ten Auxiliary Hospitals have exercised their disaster plans. Twenty-four Active Treatment Hospitals have had two or more exercises.

Three hundred and seven Hospital Disaster Kits have been issued to those Active Treatment Hospitals who have completed and successfully exercised their Disaster Plans.

No further emergency units were prepositioned. To date, twenty-four Blood Donor Packs have been stored with nineteen hospitals outside Edmonton and Calgary. Twenty-seven Casualty Collecting Units have been stored; eighteen Advanced Treatment Centres and seventeen Emergency Hospitals have been placed in their specific storage sites.

The above figures include training units for: a. Hospital Disaster Kits, b. Casualty Collecting Units, c. Advanced Treatment Centres, d. Emergency Hospitals, which are supplied by the Federal Government. A total of forty-six lectures were presented to: a. Schools of Nursing, b. The Faculty of Dentistry, c. The Faculty of Pharmacy, d. Courses at the Emergency Measures School, Edmonton, e. Volunteer Courses sponsored by The Canadian Red Cross. Twelve training courses were held under the auspices of Alberta Emergency Health Services. a. Two Nurses' Orientation Courses, b. One Nursing Aide and Nursing Orderly Course, c. One First Aid Course, d. Three Home Nursing Courses, e. Three Hospital Experience Courses, f. Two Emergency Hospital Training Courses.

Emergency Health Services Operational Plans are continually being drafted, reviewed and amended as the circumstances dictate. Cost of this program amounted to \$56,629.02 during the year.

## SPECIAL HANDICAPPED CHILDREN'S PROGRAMS

Provision is made under The Treatment Services Act to cover those programs which include the Thalidomide Program, the Multiple Handicapped Children's Units, and the Juvenile Amputee Clinics.

The Department continued certain responsibilities which were authorized in October, 1963, involving six children with Phocomelic defects presumably due to thalidomide and the cost of this program during the year amounted to \$69.58.

The Multiple Handicapped Children's Unit, at the Glenrose Provincial General Hospital, Edmonton, was established in April of 1964, and during the calendar year ending December 31, 1970, 808 patients were examined. Effective July 1, 1969, orthotic services were paid for patients treated through the Alberta Children's Hospital at Calgary and 59 applications were received during 1970 at this centre.

The Juvenile Amputee Clinics which were established at the University of Alberta Hospital, Edmonton, in June of 1964 and the Alberta Children's Hospital, Calgary, in December, 1965, continued on a consultant basis and for the twelve-month period ending December, 1970, the Edmonton clinic examined 202 patients, of whom 6 were new patients and 196 were review patients and the clinic in Calgary examined 100 cases, of whom 7 were new patients and 93 were review cases. The total cost to the Division of Medical Services for operating the Juvenile Amputee Program and the Multiple Handicapped Units amounted to \$81,673.54.

### REGISTRY FOR HANDICAPPED CHILDREN AND ADULTS

Since its inception, September 1, 1963, the Registry has accumulated a case load of 23,600 of which approximately 2,000 are deceased. New cases are registered at the rate of about 250 per month and 2,956 new cases were reported in 1970. When a notification of death is received, the case is removed from the alphabetical file and placed in a separate one, which includes the cards for stillborn babies who were registered because of congenital anomalies.

The special study into reduction deformities of limbs was continued, with 21 children and 42 control cases being investigated. A report regarding the 1969 investigation was made to the Research Sub-Committee of the Expert Committee on the Occurrence of Congenital Anomalies, Ottawa, on June 25 and 26, 1970.

The Registry continued to receive co-operation from the Hospital Services Section in registration of babies under one year of age with congenital anomalies. In this way, the Registry received 505 cases which were not registered from any other source.

The Registry continued to receive inquiries regarding specific handicaps, and during the past year were able to assist a group of parents interested in education of blind children to contact other parents throughout the province, with the result that an Alberta Society for the Visually Impaired has now been incorporated, with two offices, one in Edmonton and one in Calgary.

More recently, the "Little People of Canada" have approached the Registry in an endeavor to set up an Alberta branch of the National Association to help dwarfed people achieve self-confidence and support.

A search was made for all the children on the Registry with a diagnosis of Rubella Syndrome, and an on-going surveillance will be carried out for new cases. This is connected with a proposed study of the incidence of rubella in pregnant women, and the outcome of such infections on the foetus.

Surveys were also conducted for the Special Education Branch of the Department of Education and the Health Education Branch of the Department of Health into the number of blind-deaf children on the Registry, the number of blind children in the province, and the type of education being received by children with multiple handicaps.

The cost of operating the Registry amounted to \$14,310.02 during the fiscal year.

### CYSTIC FIBROSIS PROGRAM

This program commenced in May of 1964 and was established to provide antibiotic drugs and pancreatic enzymes necessary for the treatment of children suffering from this condition. This action was deemed necessary because of the high cost of this often life-saving treatment which was beyond the means of many.

A child is registered on this program by his or her physician using criteria recommended by the Special Drugs Advisory Committee. The drugs are provided free of charge and without a means test to child registrants up to the eighteenth birthday. Eighty-six children were receiving these drugs during the calendar year 1970 and the expenditure incurred by the Department amounted to \$13,890.17.

### DIABETIC TREATMENT PROGRAM

The Department of Health provided, without charge, insulin to diabetics who are residents of the Province of Alberta. The program commenced in 1927 and treatment is provided through a means test upon application by the patient through his or her own physician. In 1959, the program was expanded to provide the oral hypoglycemic medication "tolbutamide" for those persons capable of being treated with this drug instead of insulin. In June, 1962, "phenformin" was included under this program for certain persons. In November, 1965, "chlorpropamide" was added to the program. Several patients are being treated with combinations of these drugs.

The number of persons using these drugs during 1970, with the 1969 figures in brackets, are as follows: Insulin — 332 (310), Tolbutamide — 348 (531), Phenformin — 106 (143) and Chlorpropamide — 69 (75), making a total of 885 (1059).

In 1970, the cost of the insulin program amounted to \$15,042.72, tolbutamide \$9,192.00, phenformin \$3,181.50 and chlorpropamide \$929.50, resulting in a total expenditure for the purchase of diabetic drugs of \$28,345.72.

### PHENYLKETONURIA PROGRAM

The Special Drug Program included the treatment of phenylketonuria in 1960. This is a congenital defect found in a very small percentage of newborn infants which results in mental defects if not treated early with special dietary preparations. These preparations are provided, free of charge, and during the year six patients were in receipt of this aid under this program at a total cost of \$715.20.

### RHEUMATIC FEVER PROGRAM

This program was started in June, 1958, to provide penicillin free to children with rheumatic fever up to their eighteenth birthday. To approved patients, 200,000 units of penicillin are provided twice daily. For any patients who are sensitive to penicillin, a triple sulpha preparation is provided as an alternate prophylactic in the dosage of one 7½ grain tablet, twice daily. In 1970, 21 patients were receiving the triple sulpha while 1,335 were receiving penicillin and the cost of the program amounted to \$7,639.80. The total number of new applications and follow-up supplies, with the 1969 figures in brackets, are as follows: New applications — 166 (182) and follow-up supplies — 3,230 (3,715).



### EMERGENCY AIR AMBULANCE SERVICE

This emergency service has been in operation since 1959 and during the twelve-month period ending December 31, 1970, provided 110 flights. During the fiscal year the total cost of the program amounted to \$33,249.48. Seriously ill or injured patients in inaccessible areas are transported to hospitals by chartered aircraft, accompanied either by a physician or nurse. If a patient can be transported satisfactorily by automobile, ambulance or rail, the air service is not provided. Particulars concerning emergency flights made during 1970, with the 1969 figures in brackets, are as follows: Number of flights — 110 (116), Number of patients — 117 (117) consisting of 82 adults (83) and 35 children (34).

### POLIOMYELITIS TREATMENT PROGRAM

Under the provisions of The Poliomyelitis Sufferers Act and Regulations, residents of Alberta who suffer from poliomyelitis and its residual effects may obtain such treatment services as in-hospital medical services subsequent to the 14-day isolation period of the acute phase, surgical services and respiratory care from the day of onset of the disease. Orthopaedic appliances and other assessment procedures are also available as well as occupational therapy and outpatient speech therapy.

As of December 31, 1970, there were 3,884 registered poliomyelitis patients, an increase of 16 during the year and the cost for this program for the fiscal year ending March 31, 1971, amounted to \$39,259.87.

### TREATMENT SERVICES FOR SOCIAL SERVICE RECIPIENTS

The Treatment Services Act makes provision for treatment services for the Social Service Recipient Group. These services include dental and optical, as well as certain other limited services pertaining to physiotherapy and podiatry which are only provided when prior approval of the Director, Division of Medical Services, is obtained. The average number of Social Service Recipients for the year 1970, with the 1969 figures in brackets, are as follows: Government Child Wards — 4,815 (4,544), Aid to Dependent Children — 579 (525), All Other Social Service Recipients — 71,106 (68,909), making a total of 76,500 (73,978).

During the calendar year 1970, the average monthly number of Social Service Recipients in the province amounted to 76,500, which was an increase of 2,522 over the calendar year 1969. Provincial expenditures for treatment services on behalf of Social Service Recipients during the fiscal year 1969-70 amounted to \$1,203,989.58, compared to \$1,208,444.91 during 1970-71, indicating an increase of \$4,455.33. Provincial expenditure for the various types of services for the fiscal year 1970-71, with the 1969-70 figures in brackets, are as follows: Dental care — \$1,055,688.50 (\$1,020,925.15), Optometric services — \$152,720.41 (\$140,741.63), all other treatment services — \$36.00 (\$120.00), making a total of \$1,208,444.91 (\$1,203,989.58).

#### 1. Dental Services for Social Service Recipients

On behalf of Social Service Recipients, the per capita payment in 1970 to the Alberta Dental Associa-

tion was \$1.15 per month. Routine dental care is provided to all Social Service Recipients, and, with the exception of the Government Child Wards and Aid to Dependent Children Groups, two-thirds of the cost of new dentures is provided. Posterior bridge work is not provided, however, special dental and orthodontic care for the Government Child Wards and Aid to Dependent Children may be authorized. During the fiscal year 1970-71, the Government of the Province of Alberta paid to the Alberta Dental Association for dental services, an amount of \$1,055,688.50 compared to \$1,020,925.15 during 1969-70. This represents an increase of \$34,763.35. The average cost per treated person for each group was as follows: Government Child Wards — \$42.55, Aid to Dependent Children — \$47.62, All Other Social Service Recipients — \$52.84.

#### 2. Optical Services for Social Service Recipients

The total of all services under the program for glasses in 1970-71 amounted to 12,621 accounts, at a cost of \$152,720.41. This represents an increase of 569 services, and an increase of \$11,978.78 in payments due to increased cost of materials. Utilization and costs of optical services for 1970-71, with 1969-70 figures in brackets, are as follows: Average number of recipients — 76,500 (73,978), Number of services — 12,621 (12,052), Percentage of recipients obtaining services — 16.5% (16.2%), with a total cost of services — \$152,720.41 (\$140,741.63) indicating an average cost per service of \$12.10 (\$11.67).

#### 3. Other Treatment Services

These services include physiotherapy and podiatry, which are provided upon the recommendation of the patient's physician and the approval of the Director, Division of Medical Services. Department of Health expenditures during the year amounted to \$36.00 for physiotherapy. The out-patient physiotherapy received at the various hospitals is part of the services paid through the Hospitalization Benefits Plan, and, consequently, is not included in the above payments.

### SCHOOLS FOR NURSING AIDES

These schools, which are established pursuant to The Nursing Aides Act, 1947, are intended to give an opportunity for a career in nursing to persons who might not possess the academic qualifications to enroll in a regular school of nursing.

This program has enjoyed considerable success since its beginning at the first school at Calgary in 1948. In 1958, a second school was opened in Edmonton. The demand for Nursing Aide services has become greater with the increase in number and size of the acute and auxiliary hospitals and the decreasing time that the professional nurse has to spend with the patient. Nursing Aides figure prominently in the provision of bedside nursing care. The number of Nursing Aide graduates during 1970 totalled 582, compared to 498 during the previous year, and it cost the Government in the neighbourhood of \$525.00 to train each Nursing Aide, plus a daily living allowance of \$3.00 or \$4.70 (with dependents) paid to trainees who are not the responsibility of the Federal Government.



## REGISTRY FOR NURSING AIDES

The Nursing Aides Act makes provision for the Minister of Health to appoint a Registrar-Consultant whose duties include the registration of Certified Nursing Aides.

As of December 31, 1970, a total of 8,902 Nursing Aides have been certified, including those persons who were certified under Section 18 (b) and Section 19 of the Nursing Aide Regulations. Section 18 (b) of the Regulations relates to holders of a certificate of qualification issued from a recognized school outside of this province, while Section 19 of the Regulations refers to individuals who have certain basic qualifications and who are required to take a supplementary course and/or complete examinations in order to obtain certification. During 1970, 131 applicants were registered under Section 18 (b) and 4 applicants were registered under Section 19 of the Regulations. Cost to the Department for operating this service amounted to \$15,677.82 during the fiscal year.

## HEALTH CAREERS RECRUITMENT PROGRAM

During 1970 the Health Careers Recruitment Project was engaged in the production of a sound, effective, comprehensive program to perform its primary function, which is, the preparation and dissemination of vocational information on Health Careers to schools and Health Organizations. To further this function a continuity of projects was innovated and co-ordinated by the Health Careers Recruitment Branch.

Career information on Health Careers was distributed to 100,845 individuals (students, parents and school personnel).

Nine Career Fairs were held in nine zoned rural school areas of Alberta. Five hundred and twenty-one career presentations were given to an estimated 8,341 students in 1970.

Seventy-nine films were requested for viewing at the schools for Health Career projects.

Health Career displays were sent to 26 schools from Inuvik in the Northwest Territories to Foremost in Alberta's southern region.

The advertising program on Health Careers programs and Nursing Recruitment Week was spot announced on 17 radio stations over a three-week period. A 600 line advertisement in nine rural newspapers enhanced the publicity of the Career Fair in each community. One large 700 x 270 line advertisement appeared in the two Alberta dailies. The effectivity was assessed as a satisfactory project.

Four school counsellors' conferences were co-ordinated by the Health Career Consultants in Calgary, Edmonton, Lethbridge and Medicine Hat for the purpose of assisting school personnel in their counselling and guidance of Health Careers. A total of 215 teachers and counsellors attended the conferences.

Twenty-one hospitals (hospitals included are in Edmonton, Calgary, Lethbridge, Medicine Hat and Brooks) participated in the High School Career Visitations. Sixteen-hundred students were involved in the learning process of what the world of work entails in a hospital setting.

In addition, the Health Careers Recruitment assisted the University students with their high school

visitation and Varsity Guest Weekend by providing career information, audio visuals and displays.

The Health Careers Recruitment consultants attended four conventions, convened twelve conferences and attended 64 meetings for the purpose of maintaining effective communications with schools and health agencies, thus attaining the objectives of Health Careers Recruitment.

During the fiscal year, the cost of the program amounted to \$39,299.27.

## LABORATORY AND X-RAY SCHOOL

The training program inaugurated in 1954 by the Division of Medical Services continued as the main supply of combined laboratory and x-ray technicians for rural Alberta hospitals.

As of December, 1970, with fifteen students surviving from an enrollment of eighteen, a total of 295 persons will have received theoretical and practical training in the dual role of medical laboratory and radiography for positions of responsibility in the rural hospitals of Alberta.

There has been a steadily increasing demand for the Combined Technician. The addition to the program of SGOT determinations this year and other planned extensions increases the scope of service to rural hospital patients.

Positions are waiting for students to complete the didactic part of training and to emerge into the working phase for a further twelve months practical proving and final certification. Laboratory Quality Control is firmly established and cannot but increase the demand for trained staff with acceptable levels of performance to replace those having doubtful backgrounds and skills.

Increased facilities and output are now assured in the new premises, and plans are made for the anticipated higher demand in numbers and performance. It is hoped to organize continuing education courses to update former students to new levels, and to embrace all rural hospitals in the laboratory quality control service, regardless of personnel employed.

Over a period of seventeen years, about 47% of those having received training are still actively engaged in some way or other in their vocation.

Department costs of this program amounted to \$49,873.91 which is approximately \$3,325.00 per student.

## NORTHERN ALBERTA HEALTH SERVICES

The Northern Alberta Health Service was inaugurated April 1, 1966 by Order-in-Council under The Health Unit Act and was designed to provide improvement in health services for those areas not served by full-time Health Units and originally included Improvement Districts 121, 128, 144, 145, 147, 148, 149 and 143 excluding Wood Buffalo Park which is a Federal responsibility. These Improvement Districts have since been consolidated by the Department of Municipal Affairs so that the area now comprises part of Improvement District 23, Part of Improvement District 17 and part of Improvement District 18.

The staff consists of a Medical Officer of Health, a Senior Nurse and a Public Health Inspector, but the position of Senior Nurse remained unfilled during the

year because of the lack of a suitable applicant with training and experience. The Medical Officer of Health is a part-time position, but the Public Health Inspector is employed on a full-time basis and he visited all of the major centres in the north monthly. The preventative health service of the region is based upon the Municipal Nursing Service. There is an appropriation to encourage medical specialists to work in remote areas by payment of their travelling and subsistence expenses. An ophthalmologist and ophthalmic dispenser were transported to the northern areas to perform eye examinations and glasses were dispensed as follows:

**February 6, 7, 8 and 9, 1970—Wabasca and Desmarais:**

Registered Indians examined .....	118
Social Service Recipients examined .....	97
	<u>215</u>

Of this total, 135 received eye glasses.

TABLE 1  
PUBLIC HEALTH INSPECTIONS

	No. in 1969	Inspections in 1969	No. in 1970	Inspections in 1970
Industrial Camps .....	37	74	23	46
Grocers & Meat Outlets....	34	68	34	78
Restaurants .....	28	221	22	211
Swab Tests .....	117		176	
Bakeries .....	1	8	1	7
Lounges .....	3		3	
Waste Disposal Systems ..	27	207		
Municipal .....			13	21
Private .....			6	6
No. of Water Samples .....	220		195	
Lifted .....				
Municipal .....				
Chemical .....	31		29	
Bacteriological .....	151		94	
Private—				
Chemical .....	19		36	
Bacteriological .....	19		36	
Mobile Home Parks .....	18	54	11	51
Meetings attended .....	12		11	
Courses attended .....			6	
Conferences .....	1		1	
Communicable Disease				
Investigations .....	2		1	
Complaints Investigated ..	61		43	
—Justified .....	54		31	

The cost of the service was \$20,766.39 during the fiscal year.

## CEREBRAL PALSY CLINIC — CALGARY

The Cerebral Palsy Clinic at Calgary continued to operate under the Clinical Director. Four teams consisting of one orthopedic surgeon and one pediatrician consulted in pairs on the first four Thursdays of every month. The case load continued to increase with 51 new cases being registered during 1970. The cost of operating this Clinic amounted to \$120,733.43 for the fiscal year.

TABLE 2

STATISTICS SHOWING ACTIVITIES DURING 1970

Number of examining clinics .....	48
Number of pediatric examinations .....	160
Number of orthopedic examinations .....	216
Number of new assessments .....	51
Number of active cases .....	370

### DEPARTMENTS

#### 1. PHYSIOTHERAPY

Number of cases benefiting .....	224
Number of cases on home program .....	184
Number of assessments .....	45
Number of treatments .....	5,214
Number of parent instructions .....	636
Number of cases who had surgery .....	22
Number of cases who had hydrotherapy .....	37

#### Bracing

Day braces .....	23
Night Braces .....	24
Shoe corrections and adjustments .....	25
Brace adjustments and repairs .....	25
Film footage .....	464

#### 2. OCCUPATIONAL THERAPY

Number of cases benefiting .....	145
Number of assessments .....	80
Number of treatments .....	6,487
Number of parent instructions .....	105
Activities of daily living .....	41
Perceptual motor testing and training .....	60
Gross motor activity .....	59
Upper limb function .....	84
Non-distractibility program .....	39
Socialization .....	43
Psychological problems .....	14
Communication .....	32
Tactile stimulation .....	21
Remedial and Craft activities .....	24
Splinting .....	7

#### 3. SPEECH THERAPY (10 months)

Number of cases benefiting .....	66
Number of assessments .....	90
Number of treatments .....	1,513
Number of parent instructions .....	90
Diagnostic therapy .....	8
Articulation .....	6
Articulation and language .....	7
Articulation and voice .....	2
Language .....	22
Hearing and auditory training .....	5
Stuttering .....	2

#### 4. SOCIAL SERVICE

Interviews .....	170
Telephone calls .....	1,168
Home visits .....	23
Field trips .....	8
Conferences .....	260
Agency meetings .....	10
Parent meetings .....	3

#### 5. EDUCATION

<b>Schools</b>	
Provided by the Calgary Public School Board through a teaching Principal and three qualified teachers.	
Number of students .....	32
Number of instructional sessions .....	5,604
Number of parent interviews .....	206
<b>Parent Education</b>	
Parent meetings attended by Social Workers .....	3
Conferences with Cerebral Palsy Association's Liaison Committee .....	6
Parent Interviews .....	180
<b>Public Education</b>	
Tours of clinic by visitors .....	16
Instruction to nurses (students and R.N.'s) .....	31
Instruction to therapists (students and interns) .....	26
Instruction to medical interns .....	8
Visiting doctors .....	8
Pediatric residents bi-monthly .....	2
Instruction to University students .....	47
Lecture by staff members .....	2
Instruction to Mount Royal College students (in Social Work—once a week for nine months) .....	1
<b>Staff Education</b>	
Special teachers' meetings .....	10
Teachers' convention (4 teachers) .....	2 days
Occupational Therapist to Congress .....	1
Clinical Director to Cerebral Palsy Academy, U.S.A. ....	1
Physiotherapist to Congress .....	1
Staff in-service education—once a month .....	
Field trips .....	6
University of Calgary course on Psychology of the Handicapped (30 hours) .....	1
Fire drills .....	3
<b>Disposition of Cases</b>	
Admitted to regular school (initially) .....	2
Transferred to other Special Classes .....	3
Transferred to regular school .....	2
Attending Cerebral Palsy Association's Training Centre .....	22
Admitted to Baker Sanatorium .....	2
Deceased .....	5
<b>Foster-Home Program</b>	
Total number of cases domiciled .....	4
Number of days domiciliary allowances .....	749
<b>Transportation</b>	
Four buses provided by Cerebral Palsy Association—	
Mileage .....	71,013

## POISON CONTROL SERVICE

Two new Poison Treatment Centers were opened during the past year in two new hospitals, the Grande Cache General Hospital at Grande Cache, and the Sturgeon General Hospital at St. Albert, bringing the total to 118 in the province.

The two Poison Information Centers, one in the University Hospital, Edmonton, to service Northern Alberta, and the other in the Calgary General Hospital, Calgary, to service Southern Alberta, continued to function with numerous requests for information on the newer toxic substances and treatment for complicated poisonings.



A new reporting form issued by the Food and Drug Directorate, Department of National Health & Welfare, Ottawa, was distributed to the Treatment Centers replacing the provincial form which had been used previously. In most cases it has been well received and satisfactorily used.

The Poison Control Advisory Committee consists of thirteen interested consultants convening under the chairmanship of Dr. J. K. Martin, Professor of Paediatrics, University of Alberta. The Committee meets at the call of the chairman and they regularly review the provincial statistics on poisonings and institute methods of Poison Control.

The film "POISONS", which was produced by the Department of Health, was shown 29 times through the agency of the Branch of Public Health Education, during 1970.

Several meetings have been held with representatives of the Department of Health, Edmonton, the Pharmaceutical Association, and the Paediatric Society, regarding the introduction of child-resistant containers for all prescription pills. A study is proposed to learn the effects of the introduction of such containers versus a vigorous program of education to reduce the number of child poisonings reported annually.

In 1970, a total of 4,764 cases including deaths were reported, of these 2,221 were males and 2,543 were females. The deaths among the reported cases were 87 males and 42 females, making a total of 129 deaths, or a fatality rate of approximately 27.3 per 1000. In 1970 the Division of Vital Statistics reported 127 deaths occurring outside of hospitals.

Total cost of operating this Service amounted to \$18,336.75 for the fiscal year 1970/71.

TABLE 3  
DEATHS FROM POISONINGS REPORTED BY THE BUREAU OF VITAL STATISTICS  
AND HOSPITALS  
LISTED BY AGE GROUPS, SEX, SUBSTANCE AND CATEGORIES—FOR 1970

Categories	0 - 4		5 - 14		15 - 24		25 - 44		45 - Up		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
A. Drugs and Medicine for External Use												
Liniment .....	0	0	0	0	0	0	0	0	1	0	1	0
B. Drugs and Medicine for Internal Use												
Barbiturates .....	0	0	0	1	2	2	5	2	2	1	9	6
Prescriptions .....	0	0	0	0	0	0	0	1	2	1	2	2
Sedatives .....	1	0	0	0	1	2	4	9	3	3	9	14
C. Household Chemicals												
Glues .....	0	0	0	0	1	0	0	0	0	0	1	0
Turpentine .....	0	0	0	0	0	0	0	0	0	1	0	1
D. Industry, Auto and Fuel												
Carbon Monoxide .....	0	0	1	0	16	2	13	4	21	5	51	11
Ind. Products .....	0	0	0	0	0	0	0	0	0	1	0	1
F. Pesticides												
Insecticides .....	0	0	0	0	0	1	0	0	0	0	0	1
Rodenticide .....	0	0	0	0	0	0	3	0	1	0	4	0
G. Tobacco and Alcohol												
Ethyl .....	0	0	0	0	2	0	2	2	3	3	7	5
H. Miscellaneous												
Undetermined .....	0	0	0	0	2	0	1	0	0	1	3	1
Total .....	1	0	1	1	24	7	28	18	33	16	87	42

TABLE 4  
POISONINGS (INCLUDING DEATHS) IN EACH AGE GROUP—BY SEX AND TOTALS  
FOR ALL CATEGORIES BY MONTHS—1970

Months	0 - 4			5 - 14			15 - 24			25 - 44			45 - Up			All Age-Groups			Deaths		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Jan.	101	97	198	8	13	21	29	50	79	11	40	51	15	10	25	164	210	374	16	2	18
Feb.	128	107	235	8	18	26	23	53	76	14	28	42	2	11	13	175	217	392	3	4	7
Mar.	99	113	212	10	9	19	25	40	65	15	30	45	6	9	15	155	201	356	4	4	8
Apr.	152	99	251	16	6	22	32	48	80	21	39	60	10	18	28	231	210	441	11	2	13
May	119	88	207	17	10	27	31	51	82	11	37	48	7	11	18	185	197	382	5	6	11
June	107	76	183	17	13	30	16	53	69	9	24	33	6	16	22	155	182	337	—	—	—
July	166	111	277	12	14	26	23	51	74	16	33	49	11	15	26	228	224	452	5	7	12
Aug.	102	81	183	15	18	33	37	44	81	20	40	60	1	11	12	175	194	369	6	6	12
Sept.	111	103	214	15	16	31	23	56	79	12	36	48	8	11	19	169	222	391	11	4	15
Oct.	143	105	248	12	18	30	31	92	123	32	39	71	13	16	29	231	270	501	13	3	16
Nov.	123	99	222	17	14	31	21	63	84	19	49	68	5	9	14	185	234	419	5	2	7
Dec.	108	70	178	7	16	23	33	54	87	12	34	46	8	8	16	168	182	350	8	2	10
Totals	1,459	1,149	2,608	154	165	319	324	655	979	192	429	621	92	145	237	2,221	2,543	4,764	87	42	129

TABLE 5  
POISONINGS (INCLUDING DEATHS), BY SEX AND TOTALS FOR ALL AGE GROUPS  
FOR EACH CATEGORY BY MONTHS—1970

Months	Cat. A			Cat. B			Cat. C			Cat. D			Cat. E			Cat. F			Cat. G			Cat. H			Totals			Deaths		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Jan.	4	4	8	108	171	279	12	19	31	24	7	31	—	—	—	7	2	9	3	3	6	6	4	10	164	210	374	16	2	18
Feb.	12	14	26	100	163	263	32	21	53	15	7	22	—	—	—	4	2	6	1	2	3	11	8	19	175	217	392	3	4	7
Mar.	12	9	21	109	154	263	18	20	38	7	4	11	—	—	—	2	6	8	3	3	6	4	5	9	155	201	356	4	4	8
Apr.	12	11	23	134	163	297	35	19	54	22	5	27	1	—	10	4	14	11	5	16	6	3	9	231	210	441	11	2	13	
May	11	12	23	97	147	244	34	21	55	15	3	18	6	1	7	14	8	22	4	2	6	4	3	7	185	197	382	5	6	11
June	9	10	19	82	142	224	27	11	38	7	7	14	3	4	7	17	4	21	5	2	7	5	2	7	155	182	337	—	—	—
July	11	14	25	116	153	269	54	27	81	10	8	18	6	8	14	18	7	25	1	6	7	12	1	13	228	224	452	5	7	12
Aug.	10	6	16	95	146	241	25	19	44	15	9	24	5	5	10	11	3	14	2	3	5	12	3	15	175	194	369	6	6	12
Sept.	11	6	17	96	180	276	27	12	39	16	8	24	1	1	2	10	2	12	7	3	10	10	6	16	231	270	501	13	3	16
Oct.	15	15	30	140	221	361	27	12	39	21	10	31	1	1	2	10	2	12	7	3	10	10	6	16	231	270	501	13	3	16
Nov.	15	16	31	117	178	295	23	20	43	13	7	20	—	—	—	1	3	4	5	2	7	11	8	19	185	234	419	5	2	7
Dec.	13	11	24	104	148	252	18	12	30	16	7	23	—	—	—	1	1	2	2	—	2	14	3	17	168	182	350	8	2	10
Totals	135	128	263	1,298	1,966	3,264	332	213	545	181	82	263	23	20	43	102	46	148	46	35	81	104	53	157	2,221	2,543	4,764	87	42	129



### CIVIL SERVICE NURSE

The object of the Civil Service Nursing Branch is to provide an employee health service for the purpose of restoring, prolonging and promoting the health of approximately 11,000 Provincial Civil Servants employed in over 135 locations within the City of Edmonton. This branch consists of one Public Health Nurse and one stenographer. Cost of operating this branch for the year amounted to \$18,295.09.

Emergency care was given to occupational injuries and illnesses in accordance with written medical directives and Workmen's Compensation Regulations. Emergency care was also given for non-occupational injuries or illnesses in order to relieve suffering or prevent loss of life, until the employee was placed under the care of his personal physician. In order to enable the employee to complete his current work shift, sufficient first aid or palliative treatment was provided for minor illnesses or injuries for which he would not normally be expected to consult his personal physician. Home calls were made to absent employees to assist them with the treatment of their illness thus hastening their recovery and reducing the period of convalescence.

Twenty-three first aid rooms were in operation in various government buildings with qualified attendants acting under the direction of the Civil Service Nurse. Twenty-two employees were trained and received certificates in first aid and emergency care in order to become attendants in their respective buildings. First aid supplies, kits and cabinets were placed in areas where a first aid room was not required by Workmen's Compensation Regulations.

A monthly health education program was carried out with the use of instructional booklets, pamphlets and posters. Considerable time was spent in individual

counselling and in helping employees to accept responsibility for their own health. Instructional material was prepared and field experience provided for fifteen Public Health Nursing students from the University of Alberta.

TABLE 6

Following is a statistical résumé for the year ending December 31, 1970.

*Office Calls .....	4,154
*Home Calls .....	649
*Patients seen in other buildings by C.S.N. ....	86
*Patients seen in First Aid Rooms .....	5,849
Trips to "Emergency" and other buildings .....	205
M.D. referrals (appointments made) .....	171
Workmen's Compensation Cases .....	110
Certificates issued .....	341
Supplies sent to various locations in Government buildings ..	280
*Total patients seen .....	10,738

It will be noted that the total number of patients treated in 1970 was 10,738 as compared to 8,906 in 1969, representing an increase of 1,832 patients or a 20% increase.

Other statistical information with regard to the patients treated by the Civil Service Nursing Office (excluding the First Aid Rooms) is as follows:

(a) MALE patients treated .....	23.7%
FEMALE patients treated .....	76.3%
(b) Patients using service for first time .....	12.1%
Repeat patients .....	87.9%
(c) Occupational injuries treated .....	2.3%
Non-occupational injuries and illnesses treated .....	97.7%

#### Types of illnesses and injuries treated:

(1) Colds .....	25%
(2) Gastro-Intestinal .....	10%
(3) Sore Throats .....	6%
(4) Headaches .....	5%
(5) Abrasions, Contusions, Lacerations .....	5%
(6) Skin and Cellular .....	5%
(7) Dysmenorrhea .....	4%
(8) Eye Inflammations .....	4%
(9) Sprains and Strains .....	3%
(10) Emotional Conditions .....	2%
(11) Pyogenic Infections .....	2%
(12) Allergies .....	1%
(13) Miscellaneous .....	28%
i.e. Burns, Eye Injuries, Ears, Puncture Wounds, Rheumatism - Arthritis, Genito - Urinary, Communicable Diseases, etc.	

# DIVISION OF EPIDEMIOLOGY

E. S. O. Smith, M.Sc., M.A., M.B., B.Chir., D.P.H., D.I.H., C.R.C.P.(C), Director

Epidemiology is concerned with the distribution of disease in populations and with the factors which influence its distribution. The epidemiological method was developed during the 19th century when the principal health problems were communicable diseases, and it led to procedures for the control of epidemics. Since the middle of the present century the same basic approach has been applied to the study of chronic diseases and of accidents, and it has frequently led to the identification of risk factors which in some cases are amenable to prevention.

Now in the fourth year of its existence, the Division of Epidemiology has been providing a centralized service to other Divisions of the Department and to other agencies related to the Department by assisting with the collection, processing and tabulation of statistical data and with the design and conduct of epidemiological studies. These activities have been concerned in some cases with existing services or programs, and in other cases with special studies or research projects.

In connection with existing services or programs, assistance and data processing services have been provided on a continuing basis to:

- (1) The Division of Medical Services in relation to the Registry for Handicapped Children and Adults and in relation to the evaluation of student laboratory technicians trained by the Laboratory and X-Ray School;
- (2) The Division of Mental Health in relation to psychiatric admissions and separations;
- (3) The Division of Social Hygiene in relation to reported cases of venereal disease;
- (4) The Division of Local Health Services in relation to reported cases of other notifiable diseases;
- (5) The Division of Vital Statistics in relation to the preparation of punch cards on births, marriages and deaths for the Dominion Bureau of Statistics and in relation to the indexing of old birth registrations;
- (6) The Provincial Cancer Hospitals Board in relation to all new registrants at cancer clinics.

In connection with special studies and research projects, the Division has been collaborating with:

- (1) The Division of Medical Services in relation to a study of congenital reduction deformities of the limbs, which is being supported by a National Health Grant;
- (2) The Sturgeon Health Unit in relation to a study of farm accidents;
- (3) The Chinook Health Unit in relation to a study of a local outbreak of measles.

Throughout the year under review, the Division has been heavily committed to a study of the health effects of air pollution which is being conducted jointly by the Alberta Department of Health and the Department of Community Medicine at the University of Alberta. The Division of Environmental Health Services has also been participating. The research consists of a series of studies covering:

- (1) Variations in mortality from lung cancer and other respiratory diseases;
- (2) Morbidity (in terms of prevalence) from respiratory disease in selected communities, controlled for residential history, occupational history and smoking habits, using the British MRC questionnaire and spirometric measurements;
- (3) Levels of suspended particulate matter in air at selected sites;
- (4) Polycyclic hydrocarbon and lead content of suspended particulate matter;
- (5) Public attitudes and perception of air pollution.

This project is supported by a National Health Grant, and its aim is to determine whether air pollution in this province has yet become a hazard to health. Excellent progress has been made during the past year; the mortality study has already been completed, and all other phases of the study are proceeding smoothly.

The mortality study is based on an analysis of deaths which occurred during the five-year period 1964-68. It has been found that mortality from lung cancer among both males and females is significantly higher in urban than in rural communities, and that mortality from lung cancer among males shows a very clear urban-rural gradient — that is to say, it is highest for communities of more than 100,000 people, lowest for communities of less than 10,000 people, and somewhere in between for communities of intermediate size. Mortality from chronic bronchitis, although only one-third of that from lung cancer, follows an almost identical pattern, while mortality from bronchopneumonia is higher in rural than in urban communities.

The Division has also been collaborating with the Division of Medical Services and the Division of Local Health Services on the design of a proposed study to evaluate the effects of health education and of child-resistant containers on the incidence of accidental poisoning.

The staff of the Division now numbers six, and consists of a director, a nurse-epidemiologist, a systems analyst, a secretary and two key-punch operators. Experience during the past year has shown that there is now enough coding work, much of it highly specialized, to keep one person busy on a full-time basis, and approval is being sought for the recruitment of a medical records librarian.

For the fieldwork in connection with the study of the health effects of air pollution, the staff has been temporarily augmented by a full-time research assistant and several part-time interviewers whose salaries and travel expenses are paid from research project funds.

The Division of Epidemiology has been responsible for preparing most of the tables in this annual report pertaining to psychiatric admissions and separations (Division of Mental Health), handicapped children and adults (Division of Medical Services) and notifiable diseases (Division of Local Health Services).

# DIVISION OF SOCIAL HYGIENE

P. L. RENTIERS, M.D., Director

The year 1970 saw no changes in either personnel or facilities of the Division of Social Hygiene. The clinics in Edmonton, Calgary and Lethbridge together registered 469 more patient admissions than during the previous year. While this is to some extent a reflection of the expanding population in the province, it is thought to be largely due to the increased public awareness concerning venereal diseases, which was commented on in the 1969 report. This awareness has also resulted in an understandable greater demand for the Division to provide educational materials and to participate in various educational programmes both professional and lay. To date the demands have been met by the existing staff; but if such requests become more onerous, complying with them will constitute a full-time occupation and consideration will have to be given to the employment of a health educator to take over this area of the work.

The appended statistical information is encouraging on two points:

(1) The much discussed epidemic proportions of gonorrhoeal infections has so far failed to materialize here. There is a slight rise in incidence, but this is almost entirely accounted for by the considerably enhanced reporting of this disease by the private physicians of the province.

(2) The rate of both early and late syphilis has shown no rise—this despite the continued “searching out” techniques utilized by the Division personnel.

It should be pointed out that in 1970 the classification of early acquired syphilis was changed to correspond to the International Classification of Diseases Adapted for Use in the U.S.A. (I.C.D.A.), which is based on the W.H.O. Eighth Revision of the International Classification of Diseases (I.C.D.). This resulted in a decrease in reported incidence of secondary syphilis but an increase in reported early latent syphilis. It must be stressed that under this classification both groups are regarded as being of an early infectious nature.

For the first time the following point by point analytical breakdown is being included in order to facilitate interpretation of the statistical tables here attached:

## SYPHILIS

Total Cases: 134.

- (1) 2 (1.5%) of total cases originally came to attention because of premarital blood tests.
- (2) 37 (27.9%) of total cases were picked up because of routine bloods taken (does not include the premaritals).
- (3) 10 (7.4%) of total cases came to attention because of admittance to gaol.
- (4) 38 (28.2%) cases found as a result of a special survey carried out on an Indian Reserve by the Mobile Clinic.

- (5) No change in number of cases over 1969 (early infections).
- (6) 71 (53%) of total cases were either Indian or Metis.
- (7) 29 (21.6%) of total cases were persons 18 years and under (no congenital cases included). 25 of these were Indian or Metis.
- (8) 12 (8.9%) of total cases reported were new immigrants.
- (9) 88 (65.7%) of total cases were early infections.
- (10) 4 congenital cases (2 newborn, female—no prenatal care; 1 female age 18 years; 1 male over 20 years).
- (11) 24 (17.9%) of total cases were found because they were named as sources and/or contacts.
- (12) 73 individuals who were alleged contacts to early infectious syphilis were treated prophylactically.
- (13) Rates per 100,000 population per annum of Syphilis, All Types:

1949	1964	1965	1966	1967	1968	1969	1970
32.5	7.7	14.0	14.2	13.6	7.7	8.5	8.0

- (14) Rates per 100,000 population per annum of Early Infectious Syphilis:

1949	1964	1965	1966	1967	1968	1969	1970
12.0	5.7	11.8	12.4	11.5	5.9	5.6	5.5

## GONORRHOEA

Total confirmed\* cases ----- 4,290

Total confirmed and unconfirmed\*\* cases ----- 6,615

- (1) Approximately 14% of total confirmed cases were in persons 19 years and under.
- (2) An increase of 323 (8.1%) in reported cases of confirmed gonorrhoea and an increase of 555 (9.2%) in the total (confirmed and unconfirmed) reported cases of gonorrhoea.

The increase in the confirmed cases is almost entirely due to enhanced reporting by private physicians—1,744 cases in 1970 as compared to 1,396 in 1969. They also reported 1,012 (approximately 44%) of the unconfirmed cases.

- (3) Rates per 100,000 population per annum of Gonorrhoea:

1964	1965	1966	1967	1968	1969	1970
276.7	238.3	235.6	236.7	244.4	254.3	268.1

- (4) Indian and Metis comprise 3—5% of the total population and account for approximately 40% of total reported cases (confirmed and unconfirmed) of gonorrhoea.

\* proven bacteriologically.

\*\* not proven bacteriologically.

Once again the Division would like to express sincere gratitude to all the many people who have so willingly assisted in our work during the year.



**DIVISION OF SOCIAL HYGIENE**  
**ALLEGED SOURCES OF OR CONTACTS TO VENEREAL INFECTION**  
 January 1 to December 31, 1970

	Reported Contacts with Sufficient Information for Investigation			Reported Cases of Venereal Infection with Insufficient or No Information Concerning Contacts
	Number Reported	Number Located	Number No Action Taken	
<b>TOTALS</b> .....	5,408	4,730	181	1,875
<b>RESIDENTIAL STATUS</b>				
Alberta .....	5,065	4,529	169	—
Non-Alberta .....	307	187	7	—
Northwest Territories .....	36	14	5	—
<b>AGENTS FORWARDING INFORMATION</b>				
Private Physicians .....	2,025	1,659	128	980
Armed Forces .....	29	22	—	8
Provincial Clinics .....	3,071	2,841	51	887
Other Provinces .....	283	208	2	—

**EPIDEMIOLOGICAL INVESTIGATIONS CARRIED OUT BY DIVISION OF SOCIAL HYGIENE**

UNIT	I. Reported		Contacts to Venereal Disease		Not Investigated Insufficient Information	II. Delinquents	III. Miscellaneous
	Processed	Investigated	No Action Taken				
Edmonton Clinic	2,836	2,123	39	674	343	1,424	
Calgary Clinic	2,153	1,947	6	200	68	601	
Lethbridge Clinic	214	195	6	13	—	262	
Mobile Clinic	592	592	—	—	115	1,725	
Head Office	7,283	5,227	181	1,875	—	—	

**Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:**

[illegible]

**Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:**

[illegible]

## PROVINCIAL CLINIC, c/o Lethbridge Municipal Hospital, Lethbridge, Alberta

## Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Year		1-4 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		25-29 Years		30-39 Years		40-59 Years		60 and Over		Age Not Stated	TOTALS
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Gonorrhoea (All Forms)	—	—	—	—	—	—	—	—	4	2	17	4	8	—	8	—	6	—	1	—	—	50
Syphilis—																						
Congenital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Primary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Secondary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Early Latent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Late Latent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Tertiary (Other)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Type Undetermined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	—	—	—	—	—	—	—	—	4	2	17	5	9	—	8	—	7	—	1	—	—	53

Number of Cases of Syphilis ..... 2 Male 1 Female  
 Number of Cases of Gonorrhoea ..... 44 Male 6 Female  
 Number and Results of Serological Tests for Syphilis .....  
 Number and Results of Darkfield Examinations .....  
 Number and Results of Cerebrospinal Fluid Tests .....  
 Number and Results of Bacteriological Tests for Gonococci .....  
 Number and Results of Cultures taken for Gonococci .....  
 Total Number of Patient Visits ..... 542  
 Total Number of New Admissions ..... 145  
 Total Number of Old Infections for Follow-up First Time in Current Year .....  
 506 of which 14 were reactive  
 5 of which 1 was reactive  
 3 of which 1 was reactive  
 143 of which 36 were reactive  
 26 of which 1 was reactive

## MOBILE CLINIC

Lac La Biche, McMurray, Fort McKay, Fort Vermillion, Fox Lake, Slave Lake Area, Whitecourt, Valleyview,  
 Peace River and Grande Prairie Areas, Red Deer, Stettler, Camrose, Drayton Valley and Edson Areas.

## Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Year		1-4 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		25-29 Years		30-39 Years		40-59 Years		60 and Over		Age Not Stated	TOTALS
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Gonorrhoea (All Forms)	—	—	—	—	—	—	—	—	3	—	1	—	—	—	—	1	—	—	—	—	—	5
Syphilis—																						
Congenital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Primary	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Secondary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Early Latent	—	—	—	—	—	—	1	4	2	—	—	—	—	—	1	1	—	—	—	—	—	3
Acquired - Late Latent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acquired - Tertiary (Other)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Type Undetermined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	—	—	—	—	—	—	—	—	1	2	8	13	6	4	3	2	5	—	—	—	—	1

Number of Cases of Syphilis ..... 23 Male 5 Female  
 Number of Cases of Gonorrhoea ..... 0 Male 5 Female  
 Number and Results of Serological Tests for Syphilis—1,995 of which 182 were reactive







NEW CASES OF SYPHILIS AND GONORRHOEA REPORTED IN ALBERTA, 1970

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Year		1 - 4 Years		5 - 9 Years		10-14 Years		15-19 Years		20-24 Years		25-29 Years		30-39 Years		40-49 Years		60 and Over		Age Not Stated		TOTALS
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms)	—	—	—	2	1	5	6	9	288	304	1138	399	685	190	618	148	299	52	30	1	81	24	4290
Syphilis—																							
Congenital	—	2	—	—	—	—	1	—	3	—	1	—	4	—	1	—	5	—	—	—	—	—	4
Acquired - Primary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18
Acquired - Secondary	—	—	—	—	—	—	2	3	3	5	3	1	4	1	4	1	2	1	—	—	—	—	27
Acquired - Early Latent	—	—	—	—	—	—	—	1	7	9	4	5	6	1	3	2	2	2	—	—	—	—	43
Acquired - Late Latent	—	—	—	—	—	—	—	—	—	—	4	2	4	2	6	4	7	5	—	2	1	—	37
Acquired - Tertiary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Type Undetermined	—	—	—	—	—	—	—	—	1	—	—	1	1	—	—	—	—	1	—	—	—	—	5
TOTALS	—	2	—	2	1	5	7	12	302	320	1153	408	714	194	632	156	315	61	30	3	82	25	4424
Number of Cases of Syphilis	80 Male		54 Female																				
Number of Cases of Gonorrhoea	3,156 Male		1,134 Female																				

Total Number of Cases Reported by Various Clinics of the Division of Social Hygiene

Sex	SYPHILIS	GONORRHOEA	TOTALS
Male	55	1,944	1,999
Female	32	602	634
TOTALS	87	2,546	2,633

Cases Reported by Doctors and Military Authorities

	PRIVATE PHYSICIANS	ARMED FORCES	TOTALS
Syphilis	47	0	47
Gonorrhoea	1,702	42	1,744
TOTALS	1,749	42	1,791



# PROVINCIAL LABORATORIES

J. M. S. Dixon, M.D., F.R.C.P.(C), M.R.C.Path., Dip.Bact., Director

In 1970, the Provincial Laboratories of Public Health at Edmonton and Calgary performed microbiological or pathological examinations on 641,486 specimens received from medical practitioners, hospitals and health authorities. This is 49,940 (8.4%) more specimens than were tested in 1969. The workload increase was 7.8% in Edmonton and 10.6% in Calgary. The examination of an additional 59,780 microbiological specimens from the University of Alberta Hospital was financed by the Provincial Laboratory, although the specimens were examined in the Department of Medical Bacteriology of the University of Alberta. Thus the grand total of specimens examined in 1970 with Provincial Laboratory funds was 701,266.

Details of the specimens received are shown in Table 1, and some positive microbiological findings are listed in Table 2.

## MICROBIOLOGY

### Bacteriology

Every category of bacteriological specimen was received in larger numbers in 1970 than in 1969 at both Edmonton and Calgary. The number of urine specimens received showed a particularly large increase, reflecting general acceptance of the agar spoon method for the culture of urine that was introduced a few years ago. The Edmonton laboratory was the first in Canada to use this technique for the routine culture of urine, but it is now used in many other parts of the country.

An important development in the bacteriological work this year has been the establishment of a unit in Edmonton for the detection of sources of salmonella infection. Dr. M. C. Finlayson, who joined the staff in July, is in charge and has already initiated new laboratory tests and collected much valuable information, particularly about pet turtles as a source of infection for children. During 1970, at least 65 infections with salmonellae were either known to be associated with pet turtles or were caused by serotypes that commonly infect turtles. Of 45 patients whose ages are known, 36 were under the age of 13 years. Of 29 samples of water from turtle tanks and other turtle specimens, 18 contained salmonellae; three samples harboured at least two salmonella serotypes. It is hoped that all the major sources of human salmonellosis will eventually be traced so that appropriate action may be taken to reduce the incidence of these infections which, although usually causing self-limiting gastroenteritis, are sometimes fatal. The co-operation of members of the Department of Health, the Department of Agriculture, local health boards and units, and Federal authorities has been invaluable in these investigations. Dr. Finlayson is also studying the incidence of transmissible antibiotic resistance in salmonellae isolated in Alberta, and the use of patterns of biochemical activity of certain salmonella serotypes as a means of differentiation between different strains to facilitate the tracing of sources of infection.

Certain changes were noted during the year in the incidence of pathogenic enterobacteria causing infections of the gastro-intestinal tract. The dysentery bacilli provide a good example; isolations of *Shigella flexneri* decreased to 296 compared with 445 in 1969; there was, however, a simultaneous increase in infections by *Sh. sonnei* from 87 in 1969 to 279 in 1970. The change in incidence in Alberta of these dysentery organisms is in keeping with the general trend that is occurring throughout North America. The number of infections of infants with enteropathogenic strains of *Escherichia coli*, a major cause of infantile gastroenteritis, continued to rise. There were 834 isolations in 1970 compared with 564 in 1969 and 304 in 1968. Strains of serotypes 0119 and 0126 accounted for most of the cases. Among the salmonella organisms, there was little change in the total number of strains detected but some alteration in the frequency of the various serotypes; in particular, *Salm. enteritidis* and *Salm. infantis* became more common and *Salm. thompson* less so.

In the serology section, a more sensitive and rapidly performed technique for screening blood specimens for evidence of syphilitic infection was introduced. It is called the rapid plasma reagin (RPR) test, and has replaced the VDRL test. Studies are continuing on the possibility of automating the testing of blood for syphilitic antibodies, since more specimens are received for this test than for any other.

Diphtheria bacilli were again detected in large numbers compared with the few strains isolated annually in most North American laboratories. The 458 strains detected in 1970 included 283 from the throat and nose, 90 from ears and 85 from skin swabs. Dr. Jellard is collaborating with various local health authorities in a study of the significance and spread of diphtheria bacilli in the population of Alberta. Efforts are being made to develop a typing scheme to facilitate the epidemiological study of diphtheria infections in the Province. Methods based on the sensitivity of diphtheria bacilli to various bacteriophages and to certain other microorganisms are being pursued.

The section concerned with the detection of pathogenic organisms in food has been considerably expanded. Much of its work is concerned with salmonella bacteria, but Miss Toshach has been working on methods for the detection of staphylococcal enterotoxin in cultures and in food, and hopes shortly to be able to detect toxin in food samples. Staphylococcal food-poisoning is a common disease, but hitherto laboratory investigations have been confined to detection of the bacteria that produce the toxin; much more valuable would be a test for the toxin itself, which should soon be available.

### Parasitology

A noteworthy increase in the number of specimens of faeces examined for parasites, from 872 in 1969 to 2,832 in 1970, was largely due to investigation

of infestation with *Strongyloides stercoralis* which occurred in some patients in a mental institution in Red Deer.

### Virology

Virological work continues to be performed only at the Edmonton laboratory because of lack of space at Calgary.

The number of specimens received for virological examinations almost doubled during the year, rising from 3,232 in 1969 to 6,301 in 1970. In particular, there was an increase in the number of blood specimens received for determination of rubella antibody level. In 1970, 1,992 specimens were examined for rubella antibody, compared with 213 in 1969. Specimens are received mainly to determine whether women have suffered from rubella early in pregnancy or to determine the state of immunity prior to vaccination of certain young women in occupations where the risk of rubella infection is higher than usual.

An unusual incident in the early months of the year was an outbreak of an atypical febrile disease caused by measles virus in children who had previously been immunized with killed measles vaccine. Cases were widespread in the Province and many were undiagnosed until high antibody titres to measles virus were detected in the blood. The syndrome has been reported elsewhere but usually in much smaller numbers; in 1970, a total of 83 cases of atypical infection were investigated in the Provincial Laboratory.

In February, Mr. R. D. Devine, the chief virology technologist, noted that the cells of a human amnion cell culture he had prepared were multiplying in an atypical manner and possessed unusual characteristics. The change in character was a permanent one that had spontaneously altered the cells into a cell line capable of continuous cultivation. The importance of the observation was that Mr. Devine noted that the new cell line, designated HAE/70, was susceptible to a number of virus types which do not grow satisfactorily in cell lines in current routine use in diagnostic laboratories. Thus the new cell line is of great practical value in facilitating isolation of such viruses, which include many Coxsackie group A serotypes. It is now in routine diagnostic use in Edmonton and in a number of other Canadian virus laboratories.

Techniques were introduced for the isolation of a wider range of pathogenic viruses. Two viruses, cytomegalovirus and respiratory syncytial virus, were detected in specimens for the first time in Alberta during 1970.

Dr. Morgante continued her studies of Coxsackie virus infections and is developing rapid and specific techniques for detecting these infections.

### PATHOLOGY

Specimens were examined from more than 90,000 patients in the Edmonton laboratory and from more than 24,000 at Calgary.

#### Surgical pathology

The diagnosis of cancer continues to be an especially important role of the pathology service. During

1970, malignant disease was diagnosed at Edmonton in 1,775 instances, of which 859 were University of Alberta Hospital cases. Skin cancer in its various forms led the list, this diagnosis having been made 584 times. Cancer of the female genital system was diagnosed 277 times, of the gastro-intestinal system 193 times, of the breast 115 times, of the mouth, throat and salivary glands 103 times and of the respiratory system 86 times.

#### Autopsies

During 1970, specimens were received at Edmonton from a total of 192 autopsies performed at rural points, involving the preparation and study of a total of 1,554 tissue blocks. Seventy-two of these cases were autopsies on persons under 16 years of age. Forty-six of the autopsies involved infants stillborn or dying in the neonatal period. Most of these deaths (78%) were ascribed to premature birth or congenital malformations. Twenty-five of the autopsies involved children who had survived beyond the neonatal period. Most of these deaths (68%) were found to have been due to infections, such as pneumonia and meningitis, or accidents. There were seven cases in the difficult and puzzling "crib death" category.

#### Cytopathology

During 1970, the cytodagnostic material examined at Edmonton was similar in volume to that of 1969, but increased by 4,924 at Calgary. There was an increase in the number of vaginal specimens received from previously examined patients. Less than half the specimens examined were from new patients, the majority of whom were under 30 years of age. The total number of patients whose cervical smears have been examined at Edmonton is now about 220,000.

#### Neuropathology

A neuropathology laboratory capable of carrying out the special histological techniques required for advanced neuropathological diagnostic studies was established at Edmonton. It is directed by Dr. B. W. Mielke. The service has been organized so that all neuropathological material, whether in the form of surgical or autopsy specimens and whether from the University of Alberta Hospital or elsewhere is examined in this unit. This division also offers consultative services to other pathologists. In 1970 384 whole brains were studied, involving the processing and examination of 3,147 tissue blocks. Brain specimens of special interest referred from the Royal Alexandra Hospital, the Misericordia Hospital, Red Deer, Grande Prairie, Vegreville, Fort Smith and Yellowknife yielded diagnoses of acute infectious polyneuropathy, meningoencephalitis, inclusion body encephalitis, Schilder's disease, cerebral hypoxia, hepatic encephalopathy, Down's syndrome, purulent leptomeningitis, cerebral infarct, old hypertensive hemorrhage and agenesis of the corpus callosum.

#### Other activities

The Department of Pathology continued during 1970 to offer consultant services in difficult cases where a second opinion was sought. There are six experienced tissue pathologists at Edmonton and two at



Calgary, and their combined experience can be brought together when required to formulate opinions on material sent by pathologists in Alberta or elsewhere. Members of the pathology department served on consultant panels of the National Cancer Institute and committees of the Medical Research Council of Canada.

## GENERAL

The Edmonton laboratory continued to benefit greatly from its close association with the Departments of Pathology and Medical Bacteriology of the University of Alberta and with the University of Alberta Hospital. The co-operation and collaborations that exist ensure that diagnostic services are maintained at the highest level and are not duplicated.

During 1970, members of the medical, scientific and technical staff attended and participated in appropriate scientific meetings. Miss S. R. Toshach received the Ames Award of the Canadian Society of Laboratory Technologists at the Annual Meeting in Saskatoon. Dr. J. M. S. Dixon was elected President of the Canadian Association of Medical Microbiologists at the annual meeting in Ottawa. Papers presented at meetings outside Alberta include those given by Dr. C. H. Jellard at the meeting of the Canadian Association of Medical Microbiologists in St. John's, Newfoundland, by Dr. O. Morgante and by Mr. R. D. Devine at the Laboratory Section meeting of the Canadian Public Health Association in Ottawa, and by Dr. A. A. Padhye at the annual meeting of the American Society for Microbiology in Boston.

Ownership of the Edmonton laboratory passed to The University of Alberta from the Department of Public Works on August 1st. During the spring, alterations were made to some rooms on the third floor of the Edmonton laboratory that were previously used for animals. These now house the sputum and tuberculosis work, enabling an increased volume of work to be accomplished while reducing to a minimum the infective hazards to the staff. Another room in this area is used for the examination of food samples, with particular reference to the presence of salmonella organisms.

The range of examinations that can be conducted in the Calgary laboratory becomes increasingly restricted by shortage of space. In the summer it became necessary to discontinue most mycological work at Calgary because of lack of space. As a consequence, fungal examination of skin, hair and nail specimens and tests relating to the diagnosis of deep mycoses are now performed only at the Edmonton laboratory, to which specimens received at Calgary are now transferred.

Increasing use has been made of the telecommunications system at Edmonton and reports are now sent by this means to more than 20 hospitals. This rapid transmission of results greatly improves the diagnostic service that the Laboratory gives to hospitals and clinics outside the city; it is of particular value for microbiological specimens, the results of which are often required urgently by the physician in order that

the patient may receive appropriate treatment and that suitable action may be taken to prevent spread of infection to other persons.

Of six students who completed in 1970 the two-year training programme for technologists in cytopathology, five were successful in the certification examination in exfoliative cytology of the Canadian Society of Laboratory Technologists.

Dr. Joan Taylor, Director of the Salmonella Reference Laboratory, London, England, visited the Laboratory and gave a lecture on infantile gastroenteritis in May; and Dr. John Sever, of the National Institutes of Health, Bethesda, Maryland, was a visitor in April.

## Staff

Dr. J. W. Macgregor retired from his appointment as Director of the Department of Pathology at Edmonton on 31st August, and was succeeded by Dr. G. O. Bain. Dr. Macgregor was a member of the staff of the Laboratory for the greater part of his career. Despite many other commitments, particularly with regard to his appointment as Chairman of the University Department of Pathology, he played a full and enthusiastic part in developing the histopathology and cytopathology services of the Provincial Laboratory to their present standard of excellence. He was a loyal colleague of all four directors with whom he worked. Dr. Bain has been on the staff of the Edmonton laboratory since 1957, and we are pleased to welcome him as the new Director of Pathology.

Dr. Margaret Finlayson joined the microbiology staff at Edmonton in July. She is experienced in and well known for her work on enterobacteriology.

Dr. R. D. P. Eaton was appointed to the Edmonton staff as consultant in parasitology in October.

## PUBLICATIONS IN 1970 BY MEMBERS OF THE STAFF

### Microbiology

1. Dixon, J. M. S. and Grocholski, J. J. (1970) Automated microtitration test for antistreptolysin O. *Applied Microbiology*, **19**, 621-623.
2. Padhye, A. A. and Carmichael, J. W. (1970) Mating reactions of pigmented and non-pigmented isolates of *Arthroderma uncinatum*. *Sabouraudia*, **8**, 112-115.
3. Stewart, C. J., Dixon, J. M. S. and Curtis, B. A. (1970) Isolation of mycobacteria from tonsils, naso-pharyngeal secretions and lymph nodes in East Anglia. *Tubercle*, London, **51**, 178-183.
4. Tosach, S. R. (1970) V.D. or not V.D.?—The essential role of the laboratory. *Canadian Journal of Medical Technology*, **32**, 201-212.

### Pathology

5. Bain, G. O. (1970) Distribution, dose dependency, and effect of donor presensitization on liver infiltration in the graft-versus-host reaction. *Transplantation*, **9**, 383-394.
6. Bain, G. O. (1970) Quantitative study of liver infiltration in the graft-versus-host reaction in mice. (Abstract) *Experimental Hematology*, **20**, 52-53.
7. Kasper, T. A., Smith, E. S. O., Cooper, P., Clayton, J. and Todd, D. (1970) An analysis of the prevalence and incidence of gynecologic cancer cytologically detected in a population of 175,767 women. *Acta Cytologica*, **14**, 261-269.
8. Silverberg, D. S., Kidd, E. G., Shnitka, T. K. and Ulan, R. A. (1970) Gold nephropathy, a clinical and pathologic study. *Arthritis and Rheumatism*, **13**, 812.



TABLE 1  
WORK PERFORMED IN 1970 AT THE PROVINCIAL LABORATORY  
OF PUBLIC HEALTH

	Number of Specimens Examined at	
	Edmonton	Calgary
<b>DIAGNOSTIC BACTERIOLOGY</b>		
Nose and throat swabs .....	37,133	14,922
Faeces and rectal swabs .....	24,677	3,307
Urine .....	15,694	5,523
Sputum for tuberculosis .....	14,588	3,345
Other specimens for tuberculosis .....	6,131	1,515
Sputum for bacteria other than tubercle .....	5,891	1,231
Blood cultures .....	672	275
Genital specimens for gonorrhoea .....	30,829	12,792
Cultures referred for identification .....	1,682	148
Organisms typed by phage, etc. ....	5,879	—
Other specimens .....	14,342	12,517
<b>DIAGNOSTIC SEROLOGY</b>		
Blood for syphilis .....	172,208	56,109
Blood for enteric infections (Widal) .....	691	222
Blood for streptococcal antibodies .....	3,254	—
Other specimens .....	1,020	631
<b>DIAGNOSTIC PARASITOLOGY</b>		
Faeces for intestinal parasites .....	2,832	286
Vaginal specimens for trichomonas .....	26,126	5,714
<b>DIAGNOSTIC MYCOLOGY</b>		
Skin, hair, and nail specimens .....	2,379	135
Other specimens .....	1,655	3,382
<b>SANITARY BACTERIOLOGY</b>		
Water .....	16,137	6,287
Food, milk and cream .....	254	153
Environmental and other specimens .....	568	25
<b>DIAGNOSTIC VIROLOGY</b>		
Throat swabs for virus culture .....	780	—
Faeces for virus culture .....	417	—
Other specimens for culture .....	648	—
Blood for virus antibodies (excl. rubella)....	3,299	—
Blood for rubella virus antibodies .....	1,992	—
Other specimens .....	1,183	—
<b>ANIMAL INOCULATION</b>		
Specimens for tuberculosis .....	454	443
Specimens for virus studies .....	547	—
Other specimens .....	63	52
<b>DIAGNOSTIC PATHOLOGY</b>		
Cervical smears .....	63,127	17,409
Fluids .....	386	186
Blood smears and bone marrows .....	174	183
Routine diagnostic histology .....	28,654	6,761
Routine autopsy histology .....	1,554	13
Totals .....	487,920	153,566
Total number of specimens examined .....	641,486	

TABLE 2  
SOME POSITIVE MICROBIOLOGICAL FINDINGS  
(Comparative figures for 1969 are given in parentheses)

**BACTERIOLOGY**

<b>General</b>		
Diphtheria bacilli isolated, total .....	458 (436)	
Toxin-producing .....	199	
Non-toxin-producing .....	259	
Group A haemolytic streptococci isolated .....	8,688 (7,442)	
<b>Veneral infections</b>		
Gonococcus detected in smears .....	2,525 (2,551)	
Gonococcus isolated in cultures .....	2,252 (1,899)	
VDRL Test for syphilis; reactive results—routine .....	2,134 (1,942)	
—premarital .....	102 (65)	
Trichomonas organisms detected .....	3,062 (3,499)	
<b>Tuberculosis</b>		
Total number of tubercle bacilli isolated by culture .....	984 (831)	
from sputum .....	714	
from urine .....	64	
from cerebrospinal fluid .....	4	
from gastric washings .....	118	
from other body fluids .....	11	
from other specimens .....	73	
Total number of tubercle bacilli isolated by .....		
animal inoculation .....	131 (156)	
Total number of strains of <i>M. tuberculosis</i> tested .....		
for antibiotic sensitivity .....	699 (712)	

**Enterobacteria**

Total Salmonella isolations from human sources .....	545 (525)	
<i>S. typhimurium</i> .....	155	
<i>S. newport</i> .....	88	
<i>S. saint paul</i> .....	56	
<i>S. java</i> .....	44	
<i>S. enteritidis</i> .....	41	
<i>S. infantis</i> .....	38	
<i>S. blockley</i> .....	28	
<i>S. heidelberg</i> .....	15	
<i>S. thompson</i> .....	12	
<i>S. bredeney</i> .....	7	
<i>S. panama</i> .....	7	
<i>S. typhi</i> .....	7	
Seventeen other salmonella serotypes .....	47	
Total Shigella isolations .....	575 (532)	
<i>Sh. flexneri</i> serotype 4 .....	98	
<i>Sh. flexneri</i> serotype 6 .....	66	
<i>Sh. flexneri</i> serotype 1 .....	53	
<i>Sh. flexneri</i> other serotypes .....	79	
<i>Sh. sonnei</i> .....	279	
Total enteropathogenic <i>Escherichia coli</i> .....		
strains isolated .....	834 (564)	
<i>Esch. coli</i> serotype 0119 .....	324	
<i>Esch. coli</i> serotype 0126 .....	164	
<i>Esch. coli</i> serotype 0111 .....	97	
<i>Esch. coli</i> serotype 055 .....	69	
<i>Esch. coli</i> serotype 0127 .....	65	
Other pathogenic serotypes .....	115	
<b>MYCOLOGY</b>		
Dermatophyte fungi isolated from skin, hair and nails .....	410 (471)	
<i>Trichophyton mentagrophytes</i> .....	209	
<i>Trichophyton rubrum</i> .....	89	
<i>Trichophyton verrucosum</i> .....	54	
<i>Microsporum canis</i> .....	37	
<i>Epidermophyton floccosum</i> .....	21	
<b>PARASITOLOGY</b>		
Pathogenic intestinal parasites identified .....	203 (196)	
<i>Enterobius vermicularis</i> .....	54	
<i>Giardia lamblia</i> .....	52	
<i>Trichuris trichiura</i> .....	36	
<i>Ascaris lumbricoides</i> .....	15	
<i>Strongyloides stercoralis</i> .....	13	
<i>Clonorchis sinensis</i> .....	13	
<i>Taenia</i> species .....	9	
Hookworms .....	7	
<i>Diphyllobothrium latum</i> .....	3	
<i>Hymenolepis nana</i> .....	1	
<b>VIROLOGY</b>		
Total number of viruses isolated .....	118 (106)	
Adenoviruses .....	48	
type 1 .....	10	
type 2 .....	10	
type 3 .....	7	
type 4 .....	3	
type 5 .....	9	
type 6 .....	5	
type 14 .....	4	
Coxsackie viruses .....	6	
type A16 .....	1	
type B1 .....	1	
type B2 .....	1	
type B3 .....	1	
type B4 .....	2	
Cytomegaloviruses .....	2	
Echovirus .....	7	
type 2 .....	1	
type 3 .....	1	
type 6 .....	2	
type 11 .....	1	
type 14 .....	1	
type 22 .....	1	
Herpes simplex virus .....	21	
Influenza A virus (subtype A2, Hong .....		
Kong variant) .....	15	
Parainfluenza virus type 3 .....	1	
Polioviruses .....	10	
type 2 .....	4	
type 3 .....	6	
Respiratory syncytial viruses .....	6	
Rubella virus .....	1	
Vaccinia virus .....	1	
<b>Number of Virus and Related Infections</b>		
diagnosed serologically .....	306 (212)	
Measles .....	145	
Influenza A .....	55	
Rubella .....	46	
Mumps .....	21	
Adenoviruses .....	17	
Herpes simplex .....	5	
Mycoplasma .....	5	
Respiratory syncytial viruses .....	5	
Cytomegalovirus .....	4	
Influenza B .....	1	
Psittacosis .....	1	
Q fever .....	1	

# DIVISION OF ENVIRONMENTAL HEALTH SERVICES

**H. L. Hogge, B.Sc., P.Eng., Director**

The work of this Division, in control of air and water pollution, administration of provincial programs for the supervision of public waterworks and sewerage systems, refuse disposal systems, plumbing inspection and basic public health inspection, are reported in detail and show a marked increase in volume.

Regarding air pollution approvals, as of 1st of August, 1970, jurisdiction over gas and sulfur plants was taken over by the Oil and Gas Conservation Board.

The heightened interest of the general public in the "Environment" is evidenced by the investigation of many more complaints than usual, and participation of numerous members of the Division in public meetings and speaking engagements. A large amount of informative material was produced and made available to the public and we are convinced that these efforts are well worthwhile.

The Division of Environmental Health Services is responsible to the Minister of Health through the Deputy Minister. The administrative authority for the control of the public health function is the Provincial Board of Health and, subject to the approval of the Lieutenant Governor in Council, may make and issue orders, rules and regulations as provided for in The Public Health Act. The Provincial Board of Health is composed of the Deputy Minister of Health (Chairman), the Director of the Division of Environmental Health (Vice-Chairman), Director of the Provincial Laboratories of Public Health, Director of the Division of Local Health Services and the Director of the Veterinary Services Division, Department of Agriculture, as members.

The Division takes an active part in the work of the Alberta Advisory Committee on Pollution Control. This Committee reviews the pollution control programs of the Alberta Government and makes recommendations to the Government through the Minister of Health who is Chairman of the Advisory Committee. This Committee held its annual meeting on November 25th and 26th, 1970, in Edmonton, and was attended by 78 members and 30 non-members who attended as observers. A number of recommendations were made by the fourteen subcommittees and there was active discussion by the members during the meeting. The Division prepared a monthly bulletin entitled "Alberta Pollution Items" as part of its work with the Advisory Committee. At the end of the year this bulletin had a circulation of some 230.

The senior staff of the Division received numerous requests during the year to speak at public meetings. On a number of occasions the presentations were short panel presentations by three or four members and followed by discussion periods. The Division also prepared a booklet entitled "Alberta Pollution Control" to assist in making information available to the public. By the end of the year some 18,000 copies had been

distributed, some 7,000 of these were sent to schools throughout the Province.

In the Division there are six separate sections, each with a specialized area of responsibility, that must keep abreast of trends and developments within the Province. The specific work carried out by the various sections of the Division during the calendar year 1970 is summarized by the "Head" of each section and are attached hereto in the following order:

1. Air Pollution Control
2. Water Pollution Control
3. Municipal Engineering
4. Environmental Health Laboratory
5. Public Health Inspection
6. Plumbing Inspection

## 1. AIR POLLUTION CONTROL SECTION

**Mr. S. L. Dobko, B.Sc., P.Eng., Head**

The Air Pollution Control Section continued in its activities of assessment and control of air pollution. Work in the Section has continued to expand in quantity in certain areas as it has in previous years. The Section's work, as the purpose for which it is established, in general, was directed at regulating the pollution from new industrial plants, assessing and reducing if necessary the pollution from various industrial operations that had been in existence before 1970, assessing the level of pollution in urban areas as well as in the vicinity of industrial operations throughout the Province and investigating complaints regarding air pollution.

Besides the "Head" of this Section, the staff consists of four engineers, three senior environmental technicians and five laboratory technicians. In addition to these full-time employees, from May to September four summer students were employed to assist in carrying out source sampling surveys.

The various specific work and duties that have been carried out in 1970 by the Air Pollution Control Section are summarized as follows:

### I Operation of Mobile Laboratories

Two mobile pollution laboratories were operated throughout the Province by technicians of this Division. These units are used to investigate and observe general air pollution levels in the vicinity of gas processing plants and in sour gas field areas. These laboratories are used to monitor sulfur dioxide and hydrogen sulfide levels along with a number of meteorological parameters such as wind, temperature, relative humidity, and pressure. Besides operating these mobile units the operators are required to carry out, at each location, a survey of the area for all possible sources of pollution so that all results can be correlated.

During 1970, 34 surveys were carried out by these units at 27 different areas. Unit No. 1646 operated a total of 281 days with 84 days lost due to mov-



ing of the unit, mechanical difficulties, trailer maintenance and the annual equipment overhaul. Unit No. 1585 operated for a total of 358 days with 7 days lost due to moving of the unit, mechanical difficulties, trailer maintenance and repair, and the annual equipment overhaul. The longer than usual downtime for Unit No. 1646 was due to the addition of new facilities to the trailer.

## II Permanent Field Monitors

The Division maintains a network of field stations throughout the Province. These stations are changed on a monthly basis and are analyzed by the Pollution Control Laboratory. The number of stations that constitute the network and the pollutants analyzed are as follows: 178 exposure cylinders for the determination of total sulfation; 174 exposure cylinders for the determination of hydrogen sulfide; 75 stations for the determination of dustfall; 17 of the dustfall stations used also for the determination of sulfates; 17 of the dustfall stations used also for the determination of phosphates; 16 treated paper strips for the determination of fluorides; and 14 of the dustfall stations used also for the determination of calcium.

## III Pollution Source Surveys

In 1970, 37 source surveys were completed to observe if the plant operations were in compliance with the Air Pollution Regulations and/or within their approval conditions.

The surveys can be broken down into 26 source surveys for sulfur dioxide, 5 source surveys for particulates, 2 source surveys for sulfur dioxide and particulates and 4 source surveys for a variety of pollutants (sulfur dioxide, nitrogen dioxide, fluorides, particulates, etc.).

## IV Incinerators

The Division issued 90 approvals for new incinerators or amendments in 1970. This is the second consecutive year a decrease in incinerator approvals has been observed and tends to indicate that most of the single chamber units have been replaced and only new installations are being made.

To check if incinerators were in compliance with the "Incinerator Standards for the Province of Alberta" and that the operations were in compliance with the Air Pollution Control Regulations, 28 inspections were made. The selection of units for these checks were on a spot or complaint basis.

## V Approvals Issued to Existing Plants and New Industries

Thirty-one final approvals and 3 provisional approvals were granted to new or existing plants which made changes to their operations. In addition, 59 temporary approvals were issued for operations of a temporary nature, that is, well flaring, open burning. Most of these temporary approvals expired during the 1970 calendar year. Because the jurisdiction over gas and sulfur plants had been taken over by the Oil and Gas Conservation Board, 18 approvals were cancelled by this Department and taken over by the Oil and Gas Conservation Board.

In order to obtain a better knowledge of the area in the vicinity of new plants, 11 site investigations were carried out by members of the Division.

## VI Effect of SO<sub>2</sub> Upon Vegetation

Samples were again collected in the vicinities of gas plants to study the effect of SO<sub>2</sub> upon vegetation. In total, 171 samples were gathered by members of this Division and the Department of Lands and Forests and all of the analysis was done by the Pollution Control Laboratory of this Division.

## VII Special Projects

Geoscience Research Associates Ltd. completed their work (a three-year project sponsored by the Department of Health) in Meteorological Research in Calgary and Edmonton in March. Geoscience Research Associates Ltd. were retained to operate the meteorological equipment and collect the data for the Department.

A special project on Diesel Exhaust emissions and exhaust abatement methods was undertaken during the latter part of 1970 in conjunction with the Edmonton Transit System. The project will continue into 1971.

A determination of continuous 24 hour high volume sampler results was carried out for a period of approximately one month in Calgary.

A comparison of total particulate matter was carried out by the Division in Edmonton to determine the accuracy of the dustfall method.

## VIII Maintenance and Calibration of Equipment

To prevent major downtime in the operation of the pollution monitoring equipment a routine maintenance and calibration schedule was continued. This work is essentially carried out by the senior environmental technicians. The addition of complex electronic measurement units has made it possible to carry out this work better and quicker than before.

## IX Urban Monitoring

The Division continued to carry out detailed urban monitoring in the cities of Calgary and Edmonton. During 1970, three additional high volume samplers were added to the Calgary network and two to the Edmonton network. The Calgary air monitoring network now consists of 11 total dustfall stations, 11 total sulfation stations, 7 hydrogen sulfide stations, 5 smoke samplers, 4 fluoride stations, 4 high volume samplers, 1 oxidant analyzer and 1 nitrogen dioxide — total oxides of nitrogen analyzer. The Edmonton network now consists of 10 total dustfall stations, 6 smoke samplers, 4 hydrogen sulfide stations, 4 total sulfation stations, 3 high volume samplers, 1 oxidant analyzer, 1 hydrocarbon analyzer and 1 nitrogen dioxide — total oxides of nitrogen instrument.

In addition to the monitoring program in these two cities, the urban network was expanded to the smaller communities of the province and now monitoring is carried out in 9 Alberta centers. The Red Deer network consists of 2 total sulfation stations, 2 hydrogen sulfide stations, 1 dustfall station and 1 high volume sampler; the Lethbridge and Camrose networks consist of 1 station for the measurement of total sulfation, hydrogen sulfide, total dustfall and a high volume sampler; the St. Albert, Grande Prairie, Hinton and Medicine Hat networks consist of a high volume sampler in each community.



## **X Computer Programs**

A computer program was written to calculate and plot graphically monthly averages, seasonal averages and yearly averages for dustfall, calcium content, hydrogen sulfide, total sulfation and fluorides for a five year period. This program is to be used on the results obtained from the Division's urban and rural monitoring networks.

The existing program used to prepare the monthly urban results was modified, with the new regulations in mind, and combined with an additional program in order to expediate the dissemination of this information.

Another program was written to handle the expanded exposure cylinder networks for Edmonton and Calgary which will come into effect in the coming year, 1971.

## **XI Investigation of Complaints**

In 1970, 167 complaints were received and investigated by the Division. The majority of the complaints received deal with odor at times of critical meteorological conditions and smoke in the Edmonton area.

## **XII Seminars, Courses, Conferences**

One staff member of the Air Pollution Control Section attended the Air Pollution Control Association Conference which was held in St. Louis in June 1970. Also one staff member attended a one-week course given by the U.S. Department of Health, Education and Welfare. The Section Head also attended 7 additional seminars and meetings dealing with air pollution.

## **XIII Dissemination of Information**

During 1970 the Section received 550 requests for information regarding air pollution with the majority of these coming from school age children. In addition, 50 requests were received in person concerning air pollution and these were handled on a personal basis usually by the engineering staff.

The section personnel were invited to 22 speaking engagements during the year.

## **XIV Alberta Advisory Committee on Pollution Control**

The air pollution control section continued to partake in the activities of the Alberta Advisory Committee on Pollution Control.

## **2. WATER POLLUTION CONTROL SECTION**

**Mr. E. E. Kupchanko, M.Sc., P.Eng., Head**

The increased attention focused on the environment shifted the concern of the Section during the past year. More complaints were investigated and more direct public contact was achieved through talks and seminars. This, in addition to the responsibility of assessment and control of water pollution in Alberta imposed a considerable burden on the Section.

The staff of the Section was increased by one technician. Four engineers, two engineering technicians, two industrial laboratory technicians, and a temporary technical assistant now represent the complement of the Section.

During 1970, twenty-nine Provincial Board of Health Approvals were issued for the release and control of waste waters. Twenty-two approvals for the

application of chemicals for aquatic weed control and 15 approvals for the application of chemicals for insect control were also granted during the past year.

Detailed sampling of mercury in industrial effluents and in water courses was carried out during the year. The trend toward pinpointing specific trace materials such as pesticides, heavy metals, and polychlorobiphenyls was continued throughout the year.

A total of 1,063 samples were taken by this Section during 1970, including 458 river and stream samples, 284 industrial samples, 143 municipal samples, and 122 lake samples. Samples taken during special investigations and complaints totalled 56.

The Alberta Advisory Committee on Pollution Control continued to be active as the various Subcommittees met and discussed numerous pertinent water pollution control problems. Due to the inter-disciplinary aspects of water pollution control, the Section continued to be involved with several other governmental committees including The Alberta Inter-Departmental Committee on Pesticides, The Conservation and Utilization Committee, and Agri-Chemicals Programs Advisory Committee.

During the year the Provincial Board of Health Regulations Respecting the Disposal of Waste Water and the Control of Water Pollution (Division 39) were adopted. These regulations provided the Provincial Board of Health with control over insecticides applied to water and the mechanism for the establishment of the Water Quality Criteria.

A more detailed summary of the water pollution control program during the calendar year 1970 is presented below.

## **I The Athabasca River Basin**

On June 6, 1970 a rupture in a crude oil transmission line near Tar Island resulted in a major oil spill to the Athabasca River. The oil, which was estimated to be 19,000 barrels, moved down the river at a rate of 45 miles per day covering approximately 50% of the water surface. The oil was seen to reach Lake Athabasca by June 13, but by June 20 all visible traces had disappeared from both the river and the lake. No extensive adverse effects were noticed as a result of the oil spill.

On site investigations were carried out by two engineers from the Water Pollution Control Section, who spent a total of ten man days in the area.

For the rest of 1970 the Athabasca River and its tributaries were in good condition. Because of this, only routine bi-weekly sampling was carried out. In total, 40 river samples were taken along with 21 industrial effluent samples. The Athabasca is sampled from above Hinton to below Tar Island north of Ft. McMurray. The McLeod River is also sampled on a regular basis at Whitecourt.

## **II Bow River Basin**

Five surveys of the Bow River were conducted during the calendar year 1970. Extension to sewage treatment facilities at the Bonnybrook plant in Calgary has reduced the organic loading to the Bow River and bacteriological constituents have diminished. Twenty samples were routinely obtained from the Bow River,

seven from the Sheep River; two samples from the Elbow River were obtained as a result of complaint reports. Thirty samples were obtained from industries that discharge waste water effluents to rivers in the Bow River Basin. Thirty 24-hour composite samples were obtained from the three sewage treatment plants in Calgary.

The RM-25 robot monitor operated for a total period of 505 hours to obtain continuous monitoring of quality of the Bow River at the Baker Sanatorium and near Steir's Ranch. An automatic recording Dissolved Oxygen monitor (Union Carbide 1101) installed at the water intake line at the City of Medicine Hat Power Plant did not operate satisfactorily and this unit has been withdrawn from service.

### III North Saskatchewan River

The North Saskatchewan River system was sampled on a regular basis during 1970. Sampling was intensified upstream from Edmonton during the latter part of 1970. Bi-weekly samples were obtained at Brazeau Dam, Drayton Valley, Devon, Edmonton's Fifth Street Bridge, Fort Saskatchewan Bridge, Vinca Bridge, Waskatenau Bridge, Duvernay Bridge, Lindbergh and Lloydminster Ferry.

Industrial and municipal waste waters associated with this river were sampled regularly during the river surveys to correlate loading from all sources with the overall river water quality. Twelve of fourteen effluent sources were composite sampled over a 24-hour period during each survey.

The total number of samples taken during the year was 345. This consisted of 157 river samples, 40 municipal waste samples and 148 industrial waste samples.

The RM-25 robot monitor operated continuously near Vinca Bridge for the first 3½ months of the year. Operation was discontinued in April due to the high silt load of the river. The newly acquired "Honeywell" monitor was put into service in December 1970 and operated at this site for 240 hours.

### IV Oldman River Basin

Ten surveys of the Oldman River were completed in 1970. Most of these surveys were conducted before, during and immediately after the sugar beet refining period in late fall and early winter when a heavy organic load is imposed on the river.

Regular sampling was extended to Drywood Creek, which is a part of the Oldman River Drainage Basin, and the two gas processing plants that discharge effluent to this watercourse. Five surveys were made on the gas plants during the year.

A total of 119 samples were obtained from the various river sampling sites and effluent sources during 1970. These consisted of 57 river samples, 28 municipal waste samples and 34 industrial samples. Twenty-four hour composite samples were taken from all municipal waste sources.

A program to install a water quality monitor on the Oldman River near Fincastle was initiated. Preliminary studies for land acquisition and power supply for the site should be completed in the new year.

### V Red Deer River Basin

Surveillance of the Red Deer River and its tributaries was intensified during 1970 due to abnormally low dissolved oxygen levels both above and below the City of Red Deer. Four new sampling sites were established, one nine miles downstream from Red Deer City and three at strategic points upstream, making a total of twelve permanent sites on the river. All twelve sites were sampled every two weeks during the time of ice cover. In addition, an RM-25 robot monitor was installed at the Nevis Gas Plant giving a continuous record of dissolved oxygen, pH, temperature and conductivity approximately 52 miles downstream from Red Deer City. For correlation with upstream values, arrangements were made with the staff of the Red Deer Water Treatment Plant to take a daily dissolved oxygen reading.

During 1970, seventy-four samples of the Red Deer River were taken and analyzed. As well, 21 samples of municipal sewage and 14 of industrial effluents were analyzed. Several spot samples were also taken on upstream tributaries of the Red Deer River. In addition to the regular analysis parameters, all samples taken from the Red Deer River Basin are being analyzed for total organic carbon. These tests are being run by the Department of Energy, Mines and Resources Water Quality Laboratory in Calgary.

With this greatly increased volume of data, it is hoped that some of the problems associated with the Red Deer River can be solved.

### VI Other Rivers

The Peace River System which includes the Wapiti and Smoky Rivers was sampled twice during the year. The Blindman River, Vermilion River, Blackmud Creek, Whitemud Creek, and several lesser streams were sampled during complaint investigations or during periods when ponded waste waters are allowed to be released.

### VII Lakes

Monitoring of lakes has been extended to include ten lakes in the nearby Edmonton area and the intermediate area north of Red Deer. The extent of monitoring each lake and the associated industrial and municipal waste water discharges has been based on priorities that reflect specific problem areas for each lake. Gull, Isle, and Wabamun Lakes are sampled at various locations on a monthly basis. Cooking, Ste. Anne, La Nonne, Pigeon, Sylvan, Buffalo, and Miquelon Lakes are surveyed seasonally, four times during the year.

The problem of rooted aquatics in Lake Wabamun has generated specific studies of water quality at four different sites, namely, the town pier, Seba Beach, the Provincial Park and the Sundance Plant area. Studies of the thermal effects of the power plant effluent on Lake Wabamun have also been initiated.

### VIII Complaints

One hundred and fifty complaints of water pollution were received by this Section. This represents a five-fold increase over the complaints received in the previous year.



## IX Information Requests

Greater public interest in water pollution control resulted in 428 requests for information. This is more than double the number of requests received in 1969. Specific information concerning pesticides, mercury, algae, and detergents were also requested.

## X Conferences and Courses

The following list of conferences and courses were attended by members of the Section during 1970:

- (1) Fifteenth Annual Waste Water Conference at Niagara Falls, Ontario.
- (2) Fifth International Conference on Water Pollution Research at San Francisco, California.
- (3) Mosquito Control Conference at Great Falls, Montana.
- (4) Training Course on Plankton Analysis at Cincinnati, Ohio.

## XI Speaking Engagements

A large number of requests were received for members of the Section to participate in seminars and speaking engagements. Twenty-eight of these meetings were attended, however, requests from grade schools could not be fulfilled this past year due to other priorities within the Section.

### 3. MUNICIPAL ENGINEERING SECTION

Mr. R. N. Briggs, M.Sc., P.Eng., Head

During 1970 this Section processed 294 submissions for recommendations to the Provincial Board of Health for approval of water and sewerage projects, which includes the approvals of new systems in six communities. The total number of communities with water and/or sewerage systems is now 267. In addition, there were two public and 20 semi-public swimming pools recommended to the Provincial Board of Health for approval.

A total of 348 water and sewerage inspections in 119 communities and 33 inspections of swimming pools were conducted during the year.

Publication of "The Utility Operator" was continued in 1970 with four volumes being published. This bulletin with a circulation of 767 continues to receive very favorable comments from people associated with waterworks, sewage treatment, solid waste disposal and swimming pools.

The fluoridation of public water supplies continues to increase with 37 communities presently utilizing fluoride adjusted water.

A control program for the corrosiveness of treated municipal water supplies was completed in 1970 with 16 towns being surveyed.

Two sanitary surveys to determine the feasibility of installing municipal water and sewerage systems were conducted in Midlandvale and Rosedale.

The increased number of appeals and additional inquiries into pollution matters, and general public interest in our environment resulted in fewer inspections of water and sewerage systems being made throughout the Province. This increased work load is directly reflected in the operation and maintenance of these systems. In addition, Central Mortgage and Housing Corporation requested the services of the

Province to determine which communities should receive financial assistance under Part VIB of the National Housing Act. 27 communities were recommended to Central Mortgage and Housing Corporation for financial consideration.

Additional details on the above, along with other activities are provided as follows:

### Waterworks and Sewerage Systems

The Public Health Act requires that any new water and/or sewerage system and any extensions or alterations thereto must be approved by the Provincial Board of Health before such work is commenced. In this regard there were 294 submissions recommended to the Provincial Board of Health for their approval. Of these, 64 were for Provisional Approval and 230 were for Final Approval which authorizes construction of the project. These Final Certificates were issued to 87 communities.

The estimated value of the 226 projects covered by the Final Certificates (4 certificates were superseded) was \$36,716,517.00. Table I lists the number of Final certificates and their corresponding value since 1953.

A breakdown of the certificates issued is provided in Table II, which in turn explains into which phase of the water and sewerage system the certificates apply.

During 1970, there were 24 communities, in addition to the three new sewerage systems, that received Final Approval for the extension or provision of sewerage treatment facilities.

TABLE I  
REVIEW OF FINAL CERTIFICATES AND ESTIMATED COSTS OF  
WATER AND SEWAGE WORKS PROJECTS  
— 1970 —

Year	Number Issued	Estimated Cost	Year	Number Issued	Estimated Cost
1953	97	\$12,465,396	1962	184	\$ 9,427,465
1954	109	\$16,455,810	1963	146	\$ 8,818,845
1955	107	\$17,524,020	1964	180	\$33,758,486
1956	99	\$15,803,965	1965	195	\$16,632,629
1957	110	\$11,430,812	1966	176	\$16,895,259
1958	132	\$ 9,795,223	1967	187	\$19,974,878
1959	160	\$15,733,142	1968	244	\$35,652,155
1960	189	\$16,820,264	1969	227	\$30,090,064
1961	172	\$18,876,977	1970	226	\$36,716,517

TABLE II CERTIFICATES ISSUED DURING 1970			
Provisional Certificates		Final Certificates	
Number Issued	Estimated Cost	Number Issued	Estimated Cost
A. New Systems			
Water 5		8	
Sewer 1		3	
Total 6	\$ 490,100.00 (6 communities)	11	\$ 718,181.00
B. Water and Sewer Extensions	\$ 8,462,292.22	119	\$18,041,431.45
16	*(65 communities, 11 miscellaneous)		
C. Water Treatment, Supply and Storage	\$13,554,845.00	36	\$ 4,005,718.00
16	*(26 communities, 2 miscellaneous)		
D. Sewage Treatment	\$ 5,651,500.00	38	\$10,583,086.00
20	*(24 communities, 6 miscellaneous)		
E. Storm Sewers	\$ 478,960.00	22	\$ 3,368,100.26
6	*(16 communities)		
Total 64	\$28,637,697.22	226	\$36,716,516.71

\*Based on Final Certificates

The six communities which received approval for the installation of a water and/or sewerage system are given in Table III along with the respective system that was approved.



As of December 31, 1970, there were 267 communities served with water and/or sewerage systems; 247 communities have water systems, 19 of which do not have sewerage systems; 248 communities have sewerage systems, 20 of which do not have waterworks systems.

Additional statistics concerning the water and sewerage systems in the Province are given in Table IV.

During the year there were 348 inspections or consultations conducted with 119 of the various communities with water and/or sewerage. This includes inspection of complaints, follow-up inspections and general inspections.

The decreased number of inspections resulted from a greater work load due to the public awareness of their environment, requests for information, the requirement of Central Mortgage and Housing Corporation for Provincial approval and a general increase in work and time required for approval of projects.

### Fluoridation

Fluoridation of municipal water supplies and its operation is under the control of this Section.

Monthly reports from the communities fluoridating their water supplies are forwarded for checking and to determine the fluoride residual based on the amount of chemicals added and water treated.

In addition to the monthly reports, a yearly summary is prepared for each town and the respective fluoridation program reviewed.

The population served by controlled fluoridation is now 571,614 which represents 47.9% of the population served by piped water systems and 36.3% of the population of Alberta. An additional 35,499 people are using water with a natural fluoride content between 0.9 ppm and 1.5 ppm, making a total of 51% of the urban Alberta population being served with water containing 0.9 ppm to 1.5 ppm fluoride.

Communities which commenced fluoridation during 1970, include Taber and Cold Lake (C.F.B.). There are now 37 communities with fluoride adjusted water supplies.

### Swimming Pools

The Municipal Engineering Section is responsible for the approval and initial inspection of public and semi-public swimming pools. A total of 2 public and 20 semi-public pools were recommended and approved for construction during 1970.

During 1970, 29 inspections of public and semi-public pools were conducted. The public pools were approved for the communities of Medicine Hat and Rimbey. Semi-public pools were approved for Calgary (8), Edmonton (10), Medicine Hat (1), and Edson (1).

TABLE III  
COMMUNITIES WHICH RECEIVED FINAL APPROVAL FOR  
WATER AND/OR SEWERAGE SYSTEMS  
— 1970 —

Community	Water	Sewerage
Barnwell	*	*
Bruderheim	*	*
Plamondon	*	*
Rosedale	*	*
Standoff	*	*
Youngstown	*	*

TABLE IV  
1970 WATER, SEWERAGE AND SEWAGE TREATMENT  
SUMMARY FOR ALBERTA

Population Group	Number of Communities	Served with Waterworks		Served with Sewerage		Served with Sewage Treatment	
		Number	%	Number	%	Number	%
Over 10,000	7	7	100	7	100	7	100
3,000-10,000	22	22	100	22	100	22	100
1,000- 3,000	58	57	98	56	97	55	98
500- 1,000	42	40	95	40	95	40	100
300- 500	52	47	90	49	94	49	100
150- 300	65	54	83	55	85	55	100
Under 150	34	20	59	19	56	19	100
Total Average	280*	247	88%	248	89%	247	99.6%

Note: Jasper; Banff; Waterton; Lloydminster; Hamlets with neither water nor sewerage systems; Institutions and Summer Villages are not included.

\* Of these 280 communities, there are 267 with water and/or sewerage.

Table V provides the statistics re Swimming Pools in Alberta.

### Operator Schools

The Water and Sewerage Operator Schools were continued in 1970. A Third Year and Graduate School were held with 101 and 90 operators respectively in attendance.

Table VI lists the attendance figures to date for these schools.

Arrangements have been made to conduct a First Year Operator School in 1971.

Operator Manuals, containing the lecture material from each school were prepared and forwarded to each person in attendance.

### Staff

The permanent staff consists of four engineers and one technologist. All positions were full during the year.

During the summer two University students were hired to aid in the sampling and review of sewage treatment plants. This has been a continuing program and has greatly assisted in the upgrading of sewage treatment plants in the Province.

### Calgary Office

As of May, 1968, one of the Municipal Engineers has been present in the Calgary office during Monday afternoon and Friday morning of the first full week of every month. During the balance of the week, normal inspections, etc. are conducted in the southern part of the Province.

There have been 59 incoming calls, 88 outgoing calls and 12 visits made to the office and 10 meetings held in Calgary pertaining to our Section's work, during 1970.

The Calgary office has increased our service to the southern part of the Province as it ensures at least one visit per month is made to this portion of the Province. As a result of this there is more work being completed in this area and more assistance being given to the communities and Health Units. Evidence of the presence of an engineer in the Calgary area is provided by the increased number of certificates from the area and upgrading of the sewage treatment plants.

## Corrosion Control Program

A control program for checking the corrosiveness of chemically treated municipal water supplies was completed during 1970. Small metal "test coupons" were inserted in the waterworks system for 90 day intervals, after which the resulting weight changes are determined. These are correlated with the chemical constituents of the water by using the "Langelier's Saturation Index". If the water is excessively scale forming or corrosive the municipality is advised of the required corrective measures. Of the sixteen communities checked only five were maintaining the proper control and surveillance of the scaling and corrosive quality of the water prior to the testing program. The method and results of the control program were reported in a paper presented at the Western Canada Water and Sewerage Conference in Winnipeg.

TABLE V

### SWIMMING POOLS STATISTICS TO DECEMBER 31, 1970

Category	Number
Public Pools .....	99
Semi-Public Pools .....	159
—Apartments .....	67
—Motels and Hotels .....	51
—Clubs .....	26
—Camps .....	9
—Institutions .....	6
National Parks Pools .....	12
Department of National Defence Pools .....	8
Total .....	278

TABLE VI

### OPERATOR SCHOOLS

A. Completed first year course .....	526
B. Completed second year course .....	423
C. Completed third year course .....	380
D. Completed graduate school .....	241
E. Number of communities represented .....	195

## Sampling

Samples submitted to our laboratory from water supplies, sewerage systems and swimming pools are mainly those for control purposes and for use in answering specific questions or problems.

A breakdown of the samples listed are as follows:

Type of Sample	River, Tap, Well, Etc.	Sewage	Misc.	Total
No. of samples tested....	207	319	57	583

## Regulations — Certification of Operators

The Provincial Board of Health Regulations Respecting "Water Supplies" (Division 10) were revised and updated; and the Regulations Respecting "The Disposal of Waste Water and the Control of Water Pollution" (Division 39) were established in January 1970.

Of particular importance was the requirement that the municipal system be effectively operated and maintained by a "qualified" operator and that the name of the operator be on record with the Provincial Board of Health.

All municipal systems have been classified and the majority of operators certified in accordance with the guidelines established by the Western Canada Water and Sewerage Conference. The certification of operators was based on a voluntary basis.

## Special Surveys

Two special surveys were conducted by the Section during 1970. These surveys were part of a preliminary study to determine the need and feasibility of providing waterworks and sewerage systems in the Hamlets of Rosedale and Midlandvale.

House to house interviews were conducted to assess the adequacy of the existing private water and sewage disposal facilities and to establish priorities on what were required. Samples of the well waters were obtained for both chemical and bacteriological analyses. The Hamlets were topographically surveyed to determine possible sewer profiles, water sources etc.

From the results of the surveys an engineering report was prepared providing factual information re the provision of water and sewerage systems. Estimated costs of the proposals were included in the report.

The report resulted in the installation of a waterworks system in Rosedale. The report for the Hamlet of Midlandvale is under consideration.

## Western Canada Water and Sewerage Conference Correspondence Course for Water Treatment Plant Operators in Alberta

This course is a correspondence course for operators of water treatment plants and is provided through the Western Canada Water and Sewerage Conference. The Section supervises the 13 separate lessons and provides assistance to the operators when required. Eleven applications have been received for the 1970-71 course.

Table VII gives a summary of the attendance of this course for Alberta operators.

## Conference

The Western Canada Water and Sewerage Conference (in Winnipeg) was attended by three engineers. This is an important conference to our Division as the technical program deals directly with our work and provides an opportunity to meet with those public health and consulting engineers, contractors, operators and suppliers from the Prairie Provinces with which we work throughout the year.

The Canadian Section of the Canadian Institute on Pollution Control (in Calgary) was attended by two engineers. These conferences are technical conferences, however, they also provide a means of furnishing the Alberta "viewpoint" and permit discussion with other informed people in our field.

## Publications

The following publications were distributed or prepared during 1970.

1. Alberta Waterworks, Sewerage and Swimming Pools in Alberta 1969
2. Swimming Pool Operator Manual
3. Graduate Operator Manual
4. 3rd Year Operator Manual

In addition to the above, 4 volumes of a bulletin titled "The Utility Operator" were prepared and circulated to all operators of water and sewage systems, consulting engineers and health units. The Utility

Operator is a quarterly publication, however, it is hoped that it will become a monthly edition. Its object is to help keep the operator informed and to create added interest in the field. The circulation of this publication is now 767 and has gained wide acceptance.

### Health Units

Medical Officers of Health and/or Public Health Inspectors are contacted during our inspection trips throughout the Province. Problems relating to the water and/or sewerage systems, solid waste disposal and swimming pools are often drawn to their attention and on which we can generally be of assistance.

Questions of an engineering nature, or those concerning the Division of Environmental Health are often raised by the Health Unit and on which our advice is requested. The cordial co-operation with the Health Unit is essential to our work and greatly appreciated.

TABLE VII  
W.C.W.S.C. CORRESPONDENCE COURSE FOR  
WATER TREATMENT PLANT OPERATORS IN ALBERTA

	1962-69	1970	Total
Number commencing course .....	99	28	127
Number completing course .....	49	22	71
Number passing course .....	42	*	—
Number of communities represented....	64	—	—

\*The twenty-two men who completed the course in 1970 will be writing their exams during January 1971.

## 4. ENVIRONMENTAL HEALTH LABORATORY

Mr. W. E. Kortsch, M.Sc., Head

Analytical activities continued in co-ordination with the programs of the sections Air Pollution Control, Water Pollution Control and Municipal Engineering. Additionally, water samples from other Agencies and Departments such as Lands and Forests, and Agriculture were processed, all in conjunction with pollution.

Again the accomplished work was extended considerably in quantitative and qualitative respects as this is the general trend from year to year. To a certain degree statistics reflect the quantity of performed work. In total, 7,165 samples were received and 34,302 tests performed on them which represents an 18 percent sample and 59 percent test increase over the year 1969, and a 307 percent sample and 780 percent test increase over the year 1960. These numbers reflect clearly the growing demands in controlling pollution.

The separation of the laboratory into two branches, the Chemistry I and the Chemistry II Branch, again proved to be very successful in 1970. The first branch engages a larger number of chemists and technicians in less complex analyses and more routine work, analyzing a large number of samples, whereas the second branch engages fewer staff members but deals with more complex and non-routine analyses, and with specialized functions in performing analytical research work, very often in connection with specific projects.

### I New Instrumentation

Of the additional equipment which was acquired, the instruments of a more complex nature were an Atomic Absorption Spectrometer, a Technicon Auto-

Analyzer and an automated Titrator. They were delivered in the last weeks of the year and are in the stage of being tried at present, necessitating changes in analytical procedures. Also, the opportunity is given for an expansion of analytical programs.

As partially indicated by the names, it is the intention to use all three instruments to a high degree for automating analyses for several chemical elements and compounds in water, wastewater and air. In addition, a High-Vacuum device was designed and assembled as outlined under Section III.

## II Chemistry I Branch

This branch tested water, wastewater and air samples for approximately fifty constituents. Tables 1, 2 and 3 show the number of processed samples and tests divided into main sample types. The numbers indicate that the highest increase occurred in the fields of water pollution control and municipal engineering activities (37 and 44 percent growth, respectively, in samples, 45 and 67 percent in tests over the previous year). Approximately 300 water and wastewater samples were processed for the Fish and Wildlife Division, Department of Lands and Forests, with reference to specific pollution cases.

Figures 1, 2 and 3 show the distribution of samples and tests from month to month throughout the year. A fairly high fluctuation can be noted in this respect indicating that the staff had to be prepared for peak periods in testing; however, it did happen that samples could not always be analyzed in due time during the summer months when heavy sampling activities coincided with staff vacation.

TABLE 1  
CHEMISTRY I BRANCH

	Number of Samples	Number of Tests
Water Pollution Control .....		
River and Lake Water .....	580	7,351
Industrial Waste Water .....	284	3,019
Sewage .....	143	1,669
Miscellaneous .....	56	756
From Other Departments and Agencies .....	467	2,645
Total .....	1,530	15,440
% Increase over 1969 .....	37	45
Ratio: Tests to Samples .....		10.1

TABLE 2  
CHEMISTRY I BRANCH

	Number of Samples	Number of Tests
Municipal Engineering .....		
River, Well, Tap Water .....	207	2,774
Sewage .....	319	2,559
Miscellaneous .....	57	285
Total .....	583	5,618
% Increase over 1969 .....	44	67
Ratio: Tests to Samples .....		9.6

TABLE 3  
CHEMISTRY I BRANCH

	Number of Samples	Number of Tests
Air Pollution Control .....		
Total Sulfation .....	1,805	1,805
Hydrogen Sulfide .....	1,741	1,741
Dustfall .....	669	1,417
Fluoride .....	87	87
Vegetation for Total Sulfur .....	171	171
Stack Samples .....	240	790
Total Suspended Particulate Matter .....	74	74
Total .....	4,787	6,085
% Increase over 1969 .....	8	18
Ratio: Tests to Samples .....		1.3



### III Chemistry II Branch

As in the previous year, analyses for pesticides and herbicides in water were performed, especially for those which degrade at a low rate such as a considerable number of chlorinated and some phosphorous hydrocarbons. Column and gas chromatographic separation and identification techniques were applied. At present, the laboratory is in the position to test samples for a total of 35 of these compounds, and to determine chlorine concentrations of a fairly high number of presently non-identifiable compounds. Probably to a certain degree these are degrading herbicides and pesticides, possibly as deleterious as their parent compounds. Grab samples and carbon filters were processed, the latter representing constituents collected from several hundred gallons of water. In addition to the Division's samples, analyses for pesticides and herbicides on approximately 110 water samples were performed for the Soils, Geology and Groundwater Branch of the Water Resources Division, Department of Agriculture.

In specific pollution cases caused by different types of hydrocarbons, such as gasoline, diesel oil and heavier oils, hydrocarbons were separated either into specific fractions or specific individual compounds, and the water was tested for some water soluble hydrocarbons being deleterious to fish life.

Significant successful efforts were made for the detection of low concentrations of air pollutants as well as for automobile exhaust constituents. In general, for analytical work of such nature gas chromatographic separation techniques are also to be applied. But mainly because of restriction in air/gas volume which can be injected into a gas chromatograph an All-Glass-High-Vacuum device was designed and assembled by the branch which is able to accomplish several functions.

At the sampling source, collection of polluted air or automobile exhaust is performed by either cooling the chemical compounds below their melting points and thus solidifying them, or by simply filling plastic bags at atmospheric pressure. In the first case the sample is introduced to the vacuum device by warming it up, in the second case directly without changing the temperature. Of major importance is that the sample is cooled below the melting points of all compounds immediately after it is introduced to the vacuum device. Concentration of the sample is achieved by evacuating the air from the system, then separation into groups of compounds is accomplished by warming the solid to form gas and leading the compounds to different types of gas chromatographic columns, each designated for a specific chemical group. Separation into individual compounds takes place in the columns, and identification of them by specific detectors.

Using the described separation and identification system, a research project was initiated to evaluate the efficiency of a Catalytic Exhaust Muffler which is used

for a number of Edmonton Transit System buses. Exhausts under different engine loads are being tested for hydrocarbons, oxidized hydrocarbons such as aldehydes, ketones and acids, and for total nitrogen oxides, nitrous oxide, nitric oxide, nitrogen dioxide and carbon monoxide. Furthermore, the exhausts are filtered, and the resulting soot is being checked for total benzene extractable organic compounds and especially for the carcinogenic compound benzo(a)pyrene.

As experienced under the outlined conditions the vacuum/gas chromatograph system is able to detect pollutants such as aldehydes, ketones, acids and un-oxidized hydrocarbons as low as 0.1 to 1 nanogram (1 nanogram =  $1 \times 10^{-9}$  gram).

Table 4 shows the total number of samples and tests performed by the Chemistry II Branch, and Figure 4 the monthly distribution throughout the year.

TABLE 4  
CHEMISTRY II BRANCH

Type of Samples	Number of Samples	Number of Tests
Water .....	162	4,596
Carbon Filters .....	7	210
Air Samples .....	31	766
Miscellaneous .....	65	1,587
Total .....	265	7,159
% Increase over 1969 .....	135	306
Ratio: Tests to Samples .....		27.0
Grand Total (Chemistry I and II Branch) .....	7,165	34,302
% Increase over 1969 .....	18	59
% Increase over 1960 .....	307	780

### IV Federal Grant: "An Evaluation of Health Effects of Air Pollution in Alberta"

The above grant was established in 1969 for a period of three years and the survey is being conducted in co-operation between the University of Alberta and the Province of Alberta, Department of Health. A part of the study is the analyzing of suspended particulate matter which is collected at 13 stations throughout the province by High-Volume samplers on glass fiber filters.

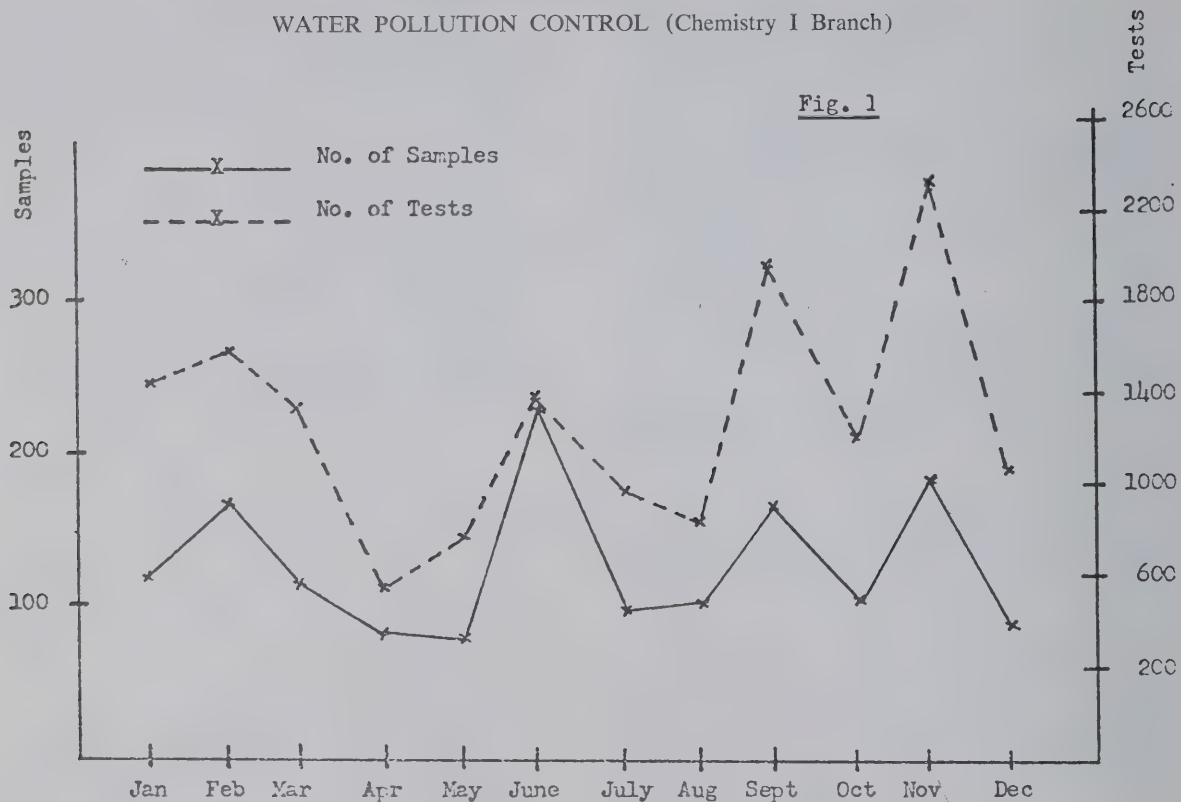
The laboratory is engaged in determining total suspended particulate matter, total cyclohexane extractable organic compounds as an indication of the presence of polycyclic hydrocarbons, and in analyzing for two specific polycyclics, i.e. benzo(a)pyrene and benzo(k)fluoranthene of which the first is of special interest due to its high degree of carcinogenicity. Column chromatography and fluorescence spectroscopy are applied for their detection. During the year 1970 a total of 507 filters were processed.

For this work a Chemist and a Laboratory Technician are employed on a temporary basis.

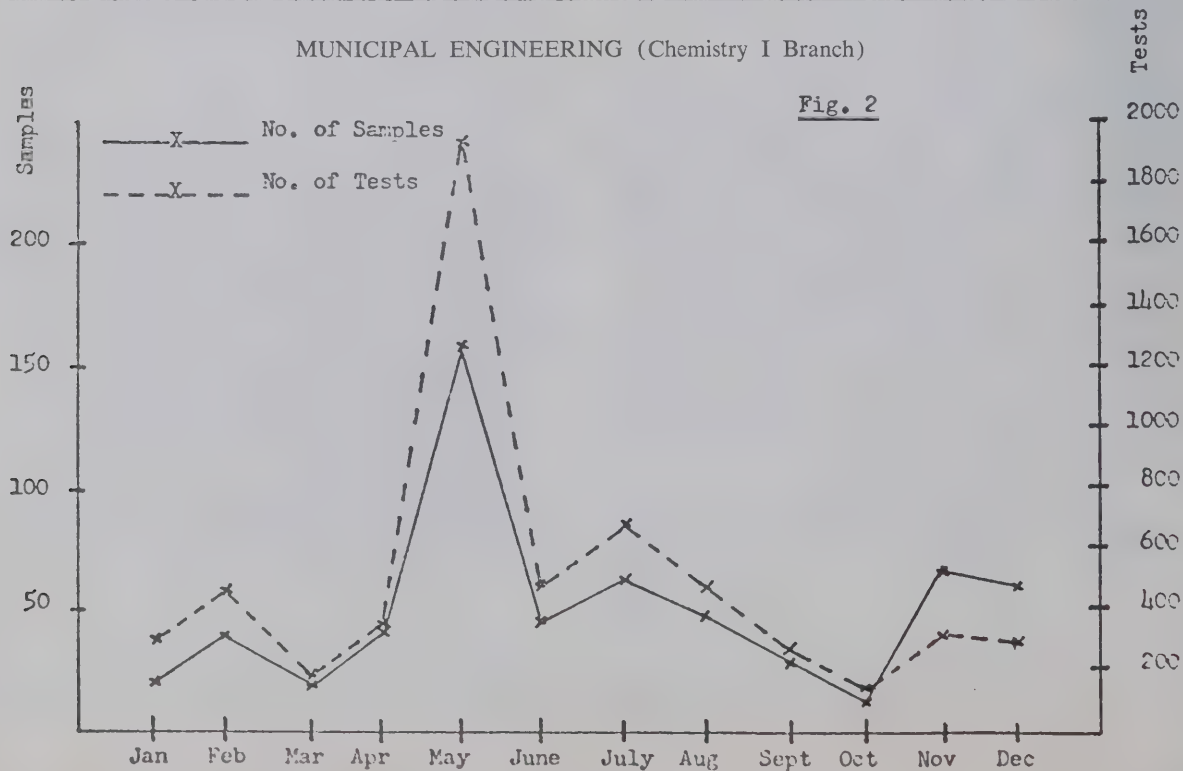
### V Staff

The permanent staff consists of six Laboratory Scientists (Chemists), eight Laboratory Technicians and one Secretary.

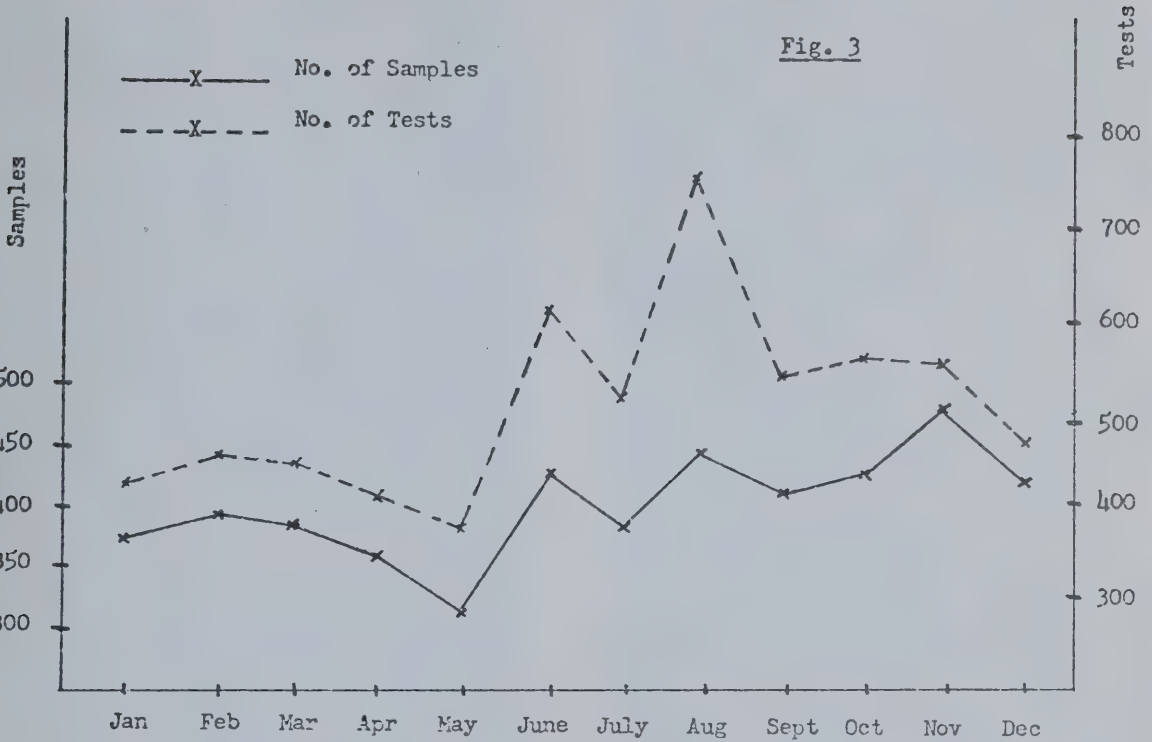
**NUMBER OF SAMPLES AND TESTS**  
**WATER POLLUTION CONTROL (Chemistry I Branch)**



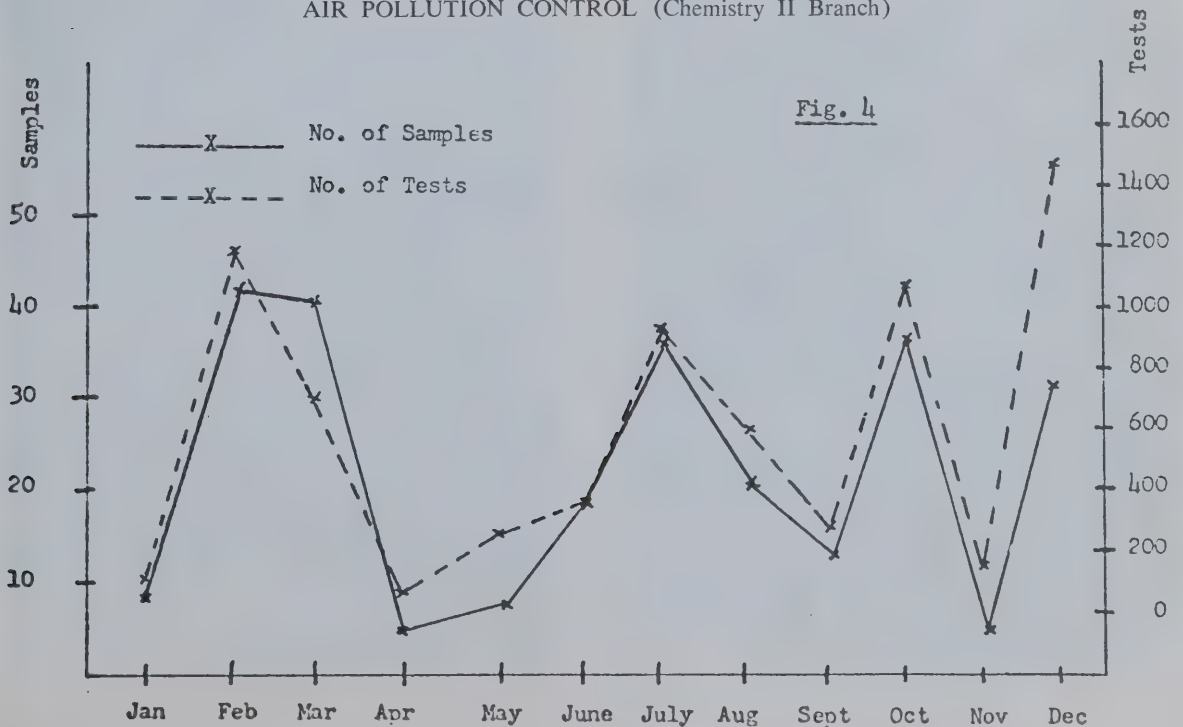
**MUNICIPAL ENGINEERING (Chemistry I Branch)**



**NUMBER OF SAMPLES AND TESTS**  
**AIR POLLUTION CONTROL (Chemistry I Branch)**



**AIR POLLUTION CONTROL (Chemistry II Branch)**





## 5. PUBLIC HEALTH INSPECTION SECTION

L. E. Stewart, Head

In 1970 there were positions for 76 full-time Public Health Inspectors in the Provincial Department of Health, City Health Departments and Health Units. At the end of the year there were two vacancies. Though these vacancies were of short duration there appears little prospect that either will be filled in the immediate future. During the year plans for training public health inspectors were considered. If these plans can be implemented in 1971 there should be some prospect of relieving recruitment problems over a period of time.

The Public Health Inspection Section of the Environmental Health Services Division has positions for a Chief Public Health Inspector and three Public Health Inspectors. A vacancy at the beginning of the year was filled in September when Mr. Robert Booth joined the staff. Unfortunately Mr. Booth resigned effective December 31, 1970, to accept a position in the City of Edmonton Health Department. This resignation is particularly regrettable coming as it did when Mr. Booth had just begun to reach his potential in the position.

Two candidates for the Certificate in Public Health Inspection (Canada) succeeded in the examination held in April. The Public Health Inspection Section assisted in setting up the examination.

There was no evidence of interest in compulsory milk pasteurization bylaws in 1970. There are 42 such bylaws in effect in cities, towns and villages, there having been no change since 1965. The facts that pasteurized milk is generally available throughout the Province and that only a small amount of un-pasteurized milk is retailed are probably factors in this lack of interest.

Local Boards of Health suspended or refused nine restaurant permits during the year. Permits were issued or reinstated where necessary measures for the protection of public health were completed. Comparative figures for recent years are: 7 in 1969, 4 in 1968, 5 in 1967, 5 in 1966 and 3 in 1965. Though none of the suspensions or refusals of permits were appealed to the Provincial Board of Health, the Provincial Public Health Inspectors did give advice to medical officers and inspectors in certain health units in regard to standards which should be expected in restaurants.

The Public Health Inspectors employed by the Department of Health were active throughout the year in activities related to environmental health. A total of 473 inspections were made. This figure does not include activities connected with the landfill survey and summer village environmental survey referred to later in this report.

There was considerable activity during the year designed to upgrade solid refuse disposal systems throughout the Province. In view of the fact that new standards for sanitary landfills and modified landfills were to become effective January 1, 1971, a survey of progress towards compliance was carried out in June and July 1970. This survey, made by Provincial Public Health Inspectors, covered 100 representative towns and villages throughout the Province. From the survey it was learned that:

necessary action completed	— 21
necessary action in progress	— 23
no action to date of investigation	— 56

Though the information was disappointing in terms of action to that time a good purpose was served. It stirred up interest in local health authorities and through them, in municipal authorities. As a result many municipalities did comply with the January 1, 1971, deadline for updating of facilities.

The Provincial Public Health Inspectors continued to be active in matters connected with the upgrading of solid refuse disposal facilities throughout the year. About 80 inspections outside of the survey were made at landfill sites to provide advice to local health authorities and municipal authorities.

The Regulations for the Control of Refuse Disposal Systems require that whenever a new modified landfill is to be established a permit must be obtained from the Provincial Board of Health. Eleven permits for establishment of modified landfills were granted in 1970 while approval of preliminary outline was granted in 13 instances. The Regulations also require that cities and towns having populations in excess of 5,000 must operate true sanitary landfills by January 1, 1971. It was also required that permits for these be obtained by January 1, 1971. Seven such permits were granted in 1970.

It is considered that the time spent by the Public Health Inspection Section on matters related to refuse disposal would be equal to full time for one inspector.

An environmental survey of summer villages on Lac Ste. Anne was carried out during the year in co-operation with the Stony Plain-Lac Ste. Anne Health Unit. This survey was concerned with provision and safety of private water supplies, sewage disposal arrangements and operation thereof, etc. The survey revealed no evidence to suggest that private sewage disposal systems were being operated in an improper manner. It was, however, found that one waste disposal ground was in deplorable condition resulting from its use for disposal of septic tank effluent. At the year end arrangements were progressing for replacing and updating this facility. There was indication of limited contamination of some water wells. It has been suggested that the health unit follow up on this to endeavor to determine the significance of this limited contamination. A general observation on the survey was that though premises throughout the six summer villages were frequently not modern in respect to conveniences, the quality of maintenance on individual properties was generally good.

As a follow up to the 1969 survey of the soft ice cream distribution industry a more limited project was carried out in 1970. The 1970 project determined reasonable bacterial standards for this product. It is anticipated that the information obtained will be the basis of standards for the industry for probable introduction in 1971. This will provide a framework to assist the industry to put its house in order.

Truck transportation of perishable foods was again a matter of concern in 1970. A survey made through the Health Units revealed that in many instances perishable commodities were transported on non-refrigerated trucks and that in some instances

there was a lengthy period of time before delivery. It appears desirable that action be initiated in co-operation with other government departments and the industry to provide a safer means of transportation for perishable foods. At the year end endeavors were being made towards that end.

A number of requests were received from Health Units for assistance in dealing with problems connected with the establishment of feed lots, pig keeping operations, large poultry operations both egg laying and broiler, and similar activities. It has been found useful to make available the experience gained by Provincial Public Health Inspectors in this area.

A major portion of one inspector's time was spent in administering the Regulations Respecting Bedding and Upholstered and Stuffed Articles. Though the Division endeavors to have Local Health Authorities act as the primary contact, it has been found necessary to have a Provincial Public Health Inspector make many visits to ensure reasonably uniform compliance with the regulations. Between July 1, 1970, the beginning of the license year and December 31, 1970, 29 manufacturers and 102 renovators were registered with a registration revenue of \$3,275.00. Comparative figures for the same period in 1969 were 31 manufacturers, 93 renovators and revenue \$3,100.00.

In October there was a five-day In-Service Training Course for Public Health Inspectors from Health Units and City Health Departments. This course was held in the SportEx on the Edmonton Exhibition Grounds. The major portion of the planning and administering was handled by the Public Health Inspection Section. The course used panels and discussions to endeavor to assist Inspectors find reasonably uniform standards of compliance within the regulations. The course attracted an excellent attendance and strong participation. It was apparently one of the most successful within recent years.

A significant portion of one inspector's time was spent on cemeteries in an endeavor to clear up the matter of approvals of locations, proper registration of titles, etc. for many cemeteries which had been established without completion of formalities. A number were put in proper order by the year's end.

The Public Health Inspection Section was asked on several occasions to assist in health education activities by providing knowledgeable persons for addresses, panels, etc.

Provincial Public Health Inspectors continued to be active participants on various Boards and Committees having responsibility in the health field.

The foregoing is a brief summary of some of the more significant activities in which the Public Health Inspection Section was engaged in 1970. Some other activities included inspections of trailer coach parks, milk producer's premises, restaurants, other food handling premises, private sewage disposal systems and public and private water supplies.

The Provincial Public Health Inspectors were engaged throughout the year in activities designed to protect the health and comfort of the people of Alberta.

## 6. PLUMBING INSPECTION SECTION

W. A. Milligan, Head

The number of inspections made, the number of plumbing permits issued and the amount of revenue received during 1970 was slightly below the previous year but above that of 1968 and all previous years.

The income received totalled \$23,608.50. The number of plumbing permits issued totalled 1,845 and the number of private sewage disposal system permits issued was 181. The number of plumbing fixtures installed throughout the Province was 369,910. The value of the plumbing installed is estimated to be approximately 78 million dollars.

The number of individual types of fixtures installed was as follows:

Water Closets .....	90,531	Lavatory Basins .....	91,257
Baths .....	67,506	Sinks .....	71,394
Laundry Facilities .....	5,244	Special Fixtures .....	43,978

During 1970 this section received requests from eight urban municipalities to take over the responsibility of providing plumbing inspection for them. We are now providing this service for 169 urban municipalities in the province. In order that a uniform inspection may be provided, it is our opinion that we should provide this inspection service for all urban municipalities, other than cities.

The inspectors of this section were required to spend much more time in factories producing mobile homes, relocatable buildings, bunk houses, etc. than in previous years. Buildings and dwellings of the relocatable type are in demand more and more with each passing year.

During 1970 inspectors from this section, assisted by technicians from our Water Pollution Section, completed a survey of Sylvan Lake, and the properties located in seventeen subdivisions surrounding the lake, to determine if plumbing system installations were causing any pollution of the lake. The survey concluded that plumbing system installations were not causing any form of lake pollution whatsoever. This survey was very well received by the public involved and everyone was as co-operative as possible with the survey team. It is our intention to carry out further surveys of this type at other lakes within the province during the coming year.

The Provincial Plumbing and Drainage Regulations were amended in many areas during the year. These amendments were made so our regulations will parallel those of the National Building Code and thereby forge another link in the chain of uniformity of plumbing regulations across Canada.

Each of our offices reported an increase in the number of individuals visiting the office for guidance and information to assist them with the installation of a plumbing system to serve their dwelling. The public certainly appreciate this service and consider it beneficial and most worthwhile.

It is expected that 1971 will be a very busy year for our section as all indications point to an increase in construction spending.







One of the most extensive, expensive and time-consuming problems has been that of reducing the health hazard to lead workers. The failure of two organizations to follow the advice given them resulted in hospitalization of employees for the treatment of lead poisoning. Remedial measures by the respective managements were not given the necessary priority until each was served with a Board of Health Order. The greatest problem in both plants was that of obtaining employee co-operation in the strict routines which had to be enforced. The routine monitoring services, previously freely available to the companies concerned were withdrawn and they were obliged to make their own arrangements through accredited laboratories at their own expense. This transfer of responsibility for health conservation and monitoring plus the requirement of direct local medical supervision has made the industries more rapidly co-operative.

A study of audiometers used in hearing conservation programmes in the community and in industry revealed that 65% were out of calibration and thus giving erroneous data. Much of this problem is the accumulation of years without adequate servicing facilities within the Province. This has been remedied and there is now an approved local agency.

The output of the chemical laboratory has been improved by the development of new microanalytical techniques for toxic agents. The most important of these has been the modification of the microanalytical method for mercury in biological specimens. A great deal of work has also been done in connection with standardization of methods and interlaboratory trials.

Requests for services offered by the Division have increased in respect to other provincial, municipal and federal agencies. Increasing attention has been given to plants which are too small to support their own occupational health programmes. Once trained physicians and occupational health nurses are available to provide a comprehensive service, many of these organizations would be interested in using a suitably placed local, co-operative occupational health service.

## Radiological Protection

**Radioactive Materials:** There are currently 158 licensed users in the Province — (industrial — 85; research — 53; medical — 20). 172 field inspections of these were made in relation to the Atomic Energy Control Regulations.

**X-Ray Equipment:** 148 X-Ray machines located in 102 installations were inspected and a total of 292 recommendations were made. Plans for 18 proposed installations were examined to ensure compliance with the requirements of The Radiation Protection Act. 73 certificates of inspection were issued by the end of the year. Certificates of inspection were withheld from installations where continued use of the facilities would be a hazard to the patient, the operator or both. In one case it was necessary to apply a Ministerial Order prohibiting use until all requirements had been met.

## Other Work:

1. 22 commercial microwave ovens, 2 Department of Transport Radar systems and one newly installed linear accelerator were surveyed.

2. At the instigation of the Division a radiological decontamination centre was established at the Foothills Hospital, Calgary.

3. The results of a survey of radioisotope laboratories at the University of Alberta were so generally unsatisfactory that it was necessary to require the University to appoint a radiation protection supervisor on a full-time basis.

4. 14 Laser assemblies were surveyed and approved.

5. 15 lectures on radiation protection were given to various professional and technical groups and industrial organizations.

6. A paper, "Alberta's X-ray Protection Program — Results of a Survey of 100 Dental X-ray Units", was published by the Journal of the Canadian Dental Association.

## Chest Survey Unit

This unit visited 172 companies and carried out chest radiography and pulmonary function tests on 1100 employees exposed to a dust hazard. The surveys planned to cover some 1500 employees but as in previous years a large number failed to show up. Many had to be excluded due to their recent involvement in surveys carried out by the Division of Tuberculosis Control. This overlapping of activities within the Department has to some degree lessened the effectiveness of the surveys and it has now been agreed that all the work shall be carried out by the Division of Tuberculosis Control who will do the case finding on behalf of the Division of Industrial Health Services. This will entail some modification of the Board of Health Regulations relating to pulmonary fibrosis and it is anticipated that this will result in industry becoming responsible for this item of employee health conservation and, by more intimate involvement, take quicker action in the remedying of hazardous conditions.

## Pesticide Applicator Licensing

This section has now been transferred to the Department of Agriculture as part of the routines under The Agricultural Chemicals Act.

## "Industrial Noise"

The second booklet in the series of occupational health notes was completed and similar booklets on Asbestos, Dusts and Volatile solvents are in preparation.

### NOTIFICATION OF INDUSTRIAL DISEASES JULY 1 - DECEMBER 31, 1970

Dermatitis .....	26
Noise Induced Hearing Loss .....	7
Lead Poisoning .....	4
Mercury Intoxic .....	1
	38
	—

# DIVISION OF ALCOHOLISM

A. H. McMullen, Acting Director

The Division of Alcoholism provides treatment and rehabilitation services, education and community services, and conducts research programs for the management, control and prevention of alcoholism and alcohol related problems in the Province of Alberta.

Treatment and Rehabilitation Services offer a wide range of individual counselling and group therapy programs in addition to psychological and medical assessment and general consultation services. Outpatient clinics are located in Edmonton, Calgary and Red Deer. Day clinic facilities are provided in both Edmonton and Calgary for homeless, transient, unemployed male and female alcoholics. Henwood Inpatient Centre located on the northeastern outskirts of Edmonton provides a comprehensive twenty-eight day treatment regimen for persons with alcoholism who require a more intense treatment program than can be provided on an outpatient basis. As well, the Division of Alcoholism maintains an alcoholism rehabilitation service for patient-inmates at both Belmont Rehabilitation Centre and Calgary Correctional Institute.

The Education and Community Services component conducts training and orientation and public information programs aimed at stimulating community concern and awareness of alcoholism and alcohol related problems. Training and orientation programs are designed to assist other individuals, agencies, and institutions to assume responsibility for the management of alcohol problems within their communities. The alteration of public attitudes toward alcoholism and the conveying of information as to the early signs and symptoms of alcoholism represent the major emphasis of the public information programs.

Community service education and orientation programs involve treatment personnel in a training capacity with specific clinical centres broadening their treatment base to include teaching and training functions.

The Research Services Branch of the Division of Alcoholism is responsible for conducting program evaluation studies to assist in determining the effectiveness of the treatment and rehabilitation programs, and the training and orientation services provided to communities. In addition, Research Services personnel stimulate and coordinate basic research projects related to the medical and psychological correlates of alcoholism, as initiated by researchers within appropriately equipped research institutions, such as the University of Alberta.

The three major components of the Division of Alcoholism, treatment, community services and research are complemented by a small Psychological Services and Professional Development component. This program area concerns the provision of psychological testing and case consultation services to treatment personnel and the development of staff orientation and in-service training programs.

## CALGARY CENTRE

### Treatment Services

The Calgary Outpatient Clinic saw an increase in its caseload during 1970, partly attributable to referrals from the Attorney General Department's alcoholism court worker.

The responsibility for the administration of the alcoholism program at Calgary Correctional Institute was transferred to the Calgary Regional office in an effort to promote the coordination of services being offered by Calgary Centre to the southern part of the province.

A day parole program was established at Calgary Correctional Institute thereby allowing patient-inmates to attend A.A. groups in Calgary and to become involved in the rehabilitation program of Trinity United Industries.

Treatment staff had continuing representation on the assessment committee and board of the Riverside Villa Halfway House for Women.

A senior counsellor provided supervision for two students from the School of Social Welfare and Mount Royal College, respectively, who were on field placement with the Calgary clinic. Nursing student orientation sessions also involved treatment personnel in a training capacity. An information program for post-graduate psychology students was conducted at Calgary clinic by treatment staff.

In addition, treatment staff have collaborated with community service personnel in cultivating relationships with native counselling services and have contributed to training programs for native counsellors. Information and general consultation services were provided for native counsellors at Kainai Industries.

### Community Services

Consultant services have been provided to communities in southern Alberta such as Crownsnest Pass and Lethbridge with a view to enlarging their role in the management and prevention of alcohol problems.

Inservice training programs for small groups of graduate nursing staff, orderlies, and nurses aides of Calgary's active training hospitals and Mount Royal College continued.

Seminars on alcoholism were conducted for the Guidance Clinic, Pastoral Institute and the Guidance Counsellors of the Calgary Separate School Board.

Community service personnel acted as resource people and group leaders for a seminar for helping professionals conducted by the Calgary Drug Information Centre. The seminar focused on the non-medical use of drugs.

Workshops on alcoholism and drugs sponsored by the Alberta Certified Nursing Aides Association of Alberta involved community service staff. These workshops were held at Calgary in May and at Medicine Hat during October.



Division of Alcoholism staff participated in a convention sponsored by the Attorney General's probation branch which was devoted to problems with alcohol and other drugs.

Alcohol programs were initiated on the Sarcee Reserve and several requests for assistance have been received from native communities with regard to providing additional training for alcoholism workers and guidance counsellors.

Industrial alcoholism programming made several new inroads with business and industry in southern Alberta. A two and a half day seminar for management personnel of Gulf Oil was conducted in mid-September. Industrial establishments in which an alcoholism policy and program were introduced included Firestone Tire and Rubber Company, Chevron Standard Ltd., and Home Oil. Refresher training seminars are planned for Imperial Oil and the City of Calgary.

### EDMONTON CENTRE

#### Treatment Services

Caseloads at the Edmonton Outpatient Clinic increased considerably in 1970 as did patient attendance at evening therapy groups. Several new therapy groups have been added, including a family life group, a young people's group, a couples' group, and an autogenic training group.

A day parole program was instituted for patient-inmates at Belmont Rehabilitation Centre. The Edmonton Day Clinic reflected a steady increase in the demand for counselling and group services, contributed to in part by the day parolees from Belmont.

The Supervisor of the Court and Correction's program was transferred to Belmont to facilitate the operation of the alcoholism program within this rehabilitation centre.

The Edmonton Outpatient Clinic and the Day Clinic have continued to participate in training and orientation programs for various helping professionals such as the nursing student orientation program and the Henwood training program for community service.

Treatment personnel are cooperating with the Attorney General's Department in an experimental project for impaired drivers.

#### Community Services

Community service staff continued to function as consultants to communities throughout the northern half of the province including High Prairie, Vermilion, and Grande Prairie, with a view to establishing alcohol education programs and treatment facilities or referral sources.

In-service training programs have been held for the staffs of Edmonton's General Hospital and Misericordia Hospital and similar arrangements have been made with other hospitals in the Edmonton and surrounding area.

The established orientation program for nursing students included the four major active training hospitals in Edmonton. Nursing aide and orderly training schools were likewise provided with information programs.

Social service groups such as the probation branch of the Attorney General's Department and the Department of Social Development were provided with staff orientation and education sessions.

The greatest expansion of community service programming occurred in the area of business and industry as programs were developed or extended with Canadian National Railways; Alberta Municipal Vehicle and Equipment Association; Alberta Government Telephones; Data Processing Managers Association; Federal Department of Transport; and the City of Edmonton.

Community service personnel have continued to respond to requests to act as speakers or to conduct seminars with organizations such as service clubs, home and school associations, church groups, A.A. groups, and others.

### RED DEER CENTRE

The average monthly caseload of Red Deer Clinic was considerably reduced in 1970, however, the overall intake was approximately double that of 1969. This was partly attributable to an emphasis on short-term therapy and the involvement of other community agencies in an active referral program.

Consultation services were provided to communities throughout central Alberta including Rocky Mountain House, Stettler, Innisfail, and Hobbema.

Training programs were developed for central Alberta Clergy at Stettler and Red Deer.

Community service personnel have continued to provide training, information, and assistance to the medical and para-medical groups in hospitals, medical clinics and health clinics throughout the Red Deer area. Inservice training programs were offered for staffs of hospitals in Red Deer, Eckville, Trochu, Three Hills, and Elnora, whereas consultant services were provided to medical clinics in Lacombe, Rocky, Sylvan Lake, Innisfail and Olds.

Included in the agencies for which community service staff conducted information programs were the Department of Social Development, John Howard Society, Family Service Bureau, Guidance Clinic, Family Life Education, and Family Court. Seminars were also organized for the Alberta Nursing Orderlies Convention.

Information programs were developed for several schools in central Alberta, for example, at Red Deer, Rimbey, Alix, Bentley and other County schools.

Industrial programming had been given additional emphasis with the result that major industries such as Chevron Standard Oil and Gulf Oil will be examining the prospect of training supervisory personnel in the ensuing year.

### HENWOOD

The Henwood treatment program was revised from an open-ended treatment regimen to a 28-day program with a team treatment approach. This enabled many more patients to be admitted to Henwood than would have been possible with the initial treatment format.

A follow-up study was initiated whereby discharged patients returned questionnaires at fixed intervals indicating progress made in the area of drinking, family relationships, employment, community involvement, and other salient measures of adjustment.

Henwood continued to be the setting for the ongoing bi-weekly community service training program



with approximately 130 community people being provided with this training experience.

The month of October saw the initiation of a two day live-in training course for City Social Service and Department of Social Development staff held during alternate weeks from the regular community service training seminar. Seven courses were conducted with a total of 34 individuals up to the end of the calendar year.

A month long orientation course was conducted for six senior staff members from Alberta Hospital, Edmonton. In addition, a nurse from the Blood Reserve, Cardston was taken on staff for a six week period in order to familiarize herself with current treatment methods.

### PSYCHOLOGICAL SERVICES AND PROFESSIONAL DEVELOPMENT

Treatment counsellors in the northern region completed training on the administration of selected psychological tests. The treatment staff in Belmont Rehabilitation Centre participated in training sessions on counselling and group therapy techniques held during May, June and July. In addition, the rehabilitation officers at Belmont and the staff of the Alberta Institution for Girls were provided with a training course on alcohol problems.

Psychological tests were administered to selected patients in the northern region following referral by counselling staff. Case consultation services were provided to individual counselling staff as well as in case conference meetings.

A training session in the therapeutic applications of the techniques of behavior modification was completed for staff at the Calgary clinic. Supervision was provided for a graduate student in Educational Psychology who spent a four-month practicum period at the Division of Alcoholism's Edmonton based facilities.

A workshop was conducted with Edmonton's senior staff on the principles of Management by Objectives. The Organization Development Division of the Provincial Government conducted seminars and workshops designed to upgrade supervisory skills. These were attended by senior staff from all regions.

### RESEARCH SERVICES

An ongoing follow-up program was initiated at Henwood Inpatient Centre with the introduction of the 28-day treatment program in January of 1970. The outpatient clinics at Edmonton and Red Deer were the

object of clinical caseload studies introduced to assess the provision of treatment and rehabilitation services and the utilization of counselling manpower. These studies will be expanded to include all Divisions of Alcoholism clinical facilities in 1971.

The Henwood training program for community service has continued to utilize research questionnaires as training and evaluation aids. Calgary Centre's nursing student orientation program was examined to ascertain the level of knowledgeability of nursing students as regards alcohol problems and to establish some base-lines for further assessment as to the effects of the orientation program.

The bibliographical material entitled "An Annotated Bibliography of the Literature on Drinking and Driving" was published in the Spring of 1970.

The statistical procedures and forms respecting the compilation of summary treatment data from all Division of Alcoholism clinics were restructured and expanded to include more specific information on services provided and the population being served.

In cooperation with the Department of Psychology at the University of Alberta, the Department of Medicine of the Royal Alexandra Hospital and the Attorney General's Department, Symposium Number Four was held at the Glenrose Hospital Auditorium in Edmonton in late November.

Among reports of studies presented at the symposium were "Occupational Problems of Alcoholics", "A Study of Alcohol Levels of Patients Attending an Emergency Room", "Attitudes of Drug Users, Alcoholics, the General Population and Other Groups", "Autokinesis and Alcoholism", "Attitudes and Explanations for Drinking Problems", and "The Alcoholic Load in a General Hospital".

Following are comparative statistics on caseloads, counselling interviews, medical treatment, and group therapy activities at the Division of Alcoholism's three outpatient clinics, the Edmonton Day Clinic, Henwood Inpatient Centre, Belmont Rehabilitation Centre, and Calgary Correctional Institute.

Caseload, for purposes of this report, is divided into two categories: (A) Patients, and (B) Relatives and Others. It is to be noted that all Edmonton Day Clinic figures represent the ten-month period from March to December 1970, and the Edmonton Outpatient Clinic includes the January and February statistics for this operation in their total report. The correctional institutions and Henwood did not classify returned individuals in their reports.

(A) PATIENTS	New		Returned		Total
	Male	Female	Male	Female	
Calgary Outpatient Clinic .....	278	59	329	55	721
Calgary Gaol - Spy Hill .....	244				244
Edmonton Day Clinic .....	251	22	617	66	956
Edmonton Outpatient Clinic .....	468	123	737	143	1,471
Edmonton Belmont Rehabilitation Centre .....	256				256
Henwood .....	478	78			556
Red Deer .....	42	4	23	5	74
	2,017	286	1,706	269	4,278
(B) RELATIVES AND OTHERS					
Calgary Outpatient Clinic .....	25	182	7	87	301
Calgary Gaol - Spy Hill .....					
Edmonton Day Clinic .....	5	11	2	26	44
Edmonton Outpatient Clinic .....	56	389	8	170	623
Edmonton Belmont Rehabilitation Centre .....	1				1
Henwood .....	38	124			162
Red Deer .....		20		1	21
	125	726	17	284	1,152
Total Caseload .....	2,142	1,012	1,723	553	5,430

The total treatment program of the Division of Alcoholism includes counselling services, group therapy and medical interviews with the doctors and nurses.

COUNSELLING INTERVIEWS	Individual		Joint		Total
	Patients	Relatives	Patients	Relatives	
Calgary Outpatient Clinic .....	3,217	623	339	10	4,189
Calgary Gaol - Spy Hill .....	1,503	326			1,829
Edmonton Day Clinic .....	1,475	38	11		1,524
Edmonton Outpatient Clinic .....	4,387	982	433	45	5,847
Edmonton Belmont Rehabilitation Centre .....	1,410	3			1,413
Henwood .....					
Red Deer .....	374	278	16	10	678
	12,366	2,250	799	65	15,480

## GROUP THERAPY

Sessions	Patients	Relatives and Others	Total
54 Calgary Outpatient Clinic .....	201	140	341
318 Calgary Gaol - Spy Hill .....	692		692
225 Edmonton Day Clinic .....	1,011	93	1,104
343 Edmonton Outpatient Clinic .....	886	552	1,438
566 Edmonton Belmont Rehabilitation Centre .....	838		838
4,232 Henwood .....	798	173	971
Red Deer .....			
5,738	4,426	958	5,384

## MEDICAL INTERVIEWS

	Doctor/Patient	Nurse/Patient	Total
Calgary Outpatient Clinic .....	286	1,899	2,185
Edmonton Outpatient Clinic .....	535	3,731	4,266
Henwood .....	1,122	1,311	2,433
	1,943	6,941	8,884

# DIVISION OF TUBERCULOSIS CONTROL

H. H. Stephens, M.D.

There were 378 active cases of tuberculosis in Alberta in 1970; and of these, 338 were new, and 40 were re-activated. Compared with 1969, there were 343 new cases, and 36 re-activated. The following table shows a comparison for the years noted:

	1965	1966	1967	1968	1969	1970
Total newly discovered cases .....	713	665	745	542	645	513
Of the above—inactive .....	366	355	409	255	302	175
active .....	347	310	336	287	343	338
Re-activated cases .....	56	31	49	40	36	40
Total active cases .....	403	341	385	327	379	378
The new active cases by groups:						
Indians .....	66	47	75	52	90	80
Metis .....	56	70	30	46	53	62
Others .....	225	193	231	189	200	196
	347	310	336	287	343	338
	1966	1967	1968	1969	1970	
New active case rate per 100,000:						
Province of Alberta .....	20.7	22.4	19.2	22.3	21.4	
Registered Indians .....	188	256	200	315	283	
Metis .....	280	120	177	196	225	

The Indian and Metis groups are obviously high-risk, and the prevalence of tuberculosis among them is at least ten times greater than in the balance of the population. The search for new cases is intensified in these groups. The mobile or portable x-ray units visit these areas each year, and in localized communities, where a number of new cases has been discovered during the past year, the x-ray units visit every six months. Those persons who had gross exposure to an open case, are reactors to tuberculin, and have no x-ray evidence of disease, are given a course of preventative therapy, using one anti-tuberculous drug for one year. Others who reside in the same home, who do not show a reaction to tuberculin two months after contact is broken, are offered B.C.G. vaccination.

However, in spite of these efforts, the incidence of tuberculosis has remained on a plateau, not only in Alberta, but generally across Canada, with statistics for the latter reporting about 4,500 new active cases each year. The reason for the plateau noted in the active case rate in Alberta may be explained from a combination of factors, such as the insidious nature of the disease, the general health and environment of the host, the lack of bacteriocidal medications, the difficulty in maintaining drug therapy on an out-patient basis for prolonged periods up to two years, and the adaptive nature of the tubercle bacillus, the germ which causes tuberculosis.

To briefly comment on these factors, it is commonly known that tuberculosis is a silent disease in its onset, often being present for some months before creating symptoms extensive enough to have the person seek medical attention. Tuberculosis is transmitted from an active case usually by very fine droplets of microscopic size, which are scattered into the air by

coughing, sneezing, etc. Not all persons who inhale these germs develop active clinical disease, however, approximately two to five percent do. Certain individuals are more prone to develop disease, and it is known that Eskimos, Negroes, and our native Indians are in this group. Living quarters that are crowded and poorly ventilated are conducive to the spreading of any infectious respiratory disease; hence if an infectious person is in such an environment for some months before detection, several residents of that home, and perhaps neighbors who visit, are likely to be infected, and some may require treatment. This results in "pockets of infection", and is the common finding, concerning new active cases in Alberta as well as in some other provinces.

Alberta is roughly divided into the southern half, Red Deer to the South border; and the northern half, Lacombe to the 60th parallel, for survey purposes, follow-up work and treatment facilities. The following table indicates the areas from which 338 new active cases were found in 1970:

Northern Alberta:	
1. Health Unit areas .....	77
2. Local Improvement Districts .....	9
3. City of Edmonton .....	83
4. Registered Indians .....	57
Total .....	226
Southern Alberta:	
1. Health Unit areas .....	32
2. City of Calgary .....	57
3. Registered Indians .....	23
Total .....	112

It is noted in the summary and table concerning newly discovered cases by residence, that five areas in Northern Alberta have new active case rates above the provincial average of 21.4 per 100,000. It should be noted again that Indians and Metis are high-risk groups, and that there are about 29,000 of the former in the province, 10,000 in the southern half, and 19,000 in the northern half. There are about 27,000 Metis, and practically all reside in the northern half of the province. In the same table four small Health Unit areas reported no new active cases. There were ten Health Unit areas with rates of 10 per 100,000 or less, while eight had more than 10, but less than 21.4 the provincial average, and included in this group were the two major cities, Edmonton and Calgary.

Reference has been made to the higher incidence of tuberculosis among our Native Indians, numbering about 29,000, who are grouped into six agencies in the province; four being in the northern half, and two in the southern half. The following table shows the number of new and re-activated cases discovered in each agency during 1969 and 1970:

Northern Alberta Agencies:	Population	New active		Re-activated		Total active		Rate per 100,000	
		1969	1970	1969	1970	1969	1970	1969	1970
1. Edmonton/Hobbema .....	5,436	12	11	1	3	13	14	238	257
2. Ft. Vermilion .....	2,346	11	8	1	1	12	9	510	383
3. Lesser Slave Lake .....	3,727	4	6	4	2	8	8	212	214
4. Saddle Lake/Athabasca .....	6,022	44	31	2	2	46	33	731	547
Southern Alberta Agencies:									
1. Stony/Sarcee .....	5,028	10	15	0	1	10	16	200	318
2. Blood/Peigan .....	5,674	2	7	0	0	2	7	35	123
Non Resident .....		1	7	0	0	0	0	0	0



There are significant increases noted in both the agencies in Southern Alberta. Only one in the northern half had two more new cases than in 1969, while two had appreciable decreases in new cases. In all six agencies there are forty-three Bands, and credit should be given to eighteen of these Bands who had no new active cases of tuberculosis in 1970, while twenty-five Bands had new active cases reported.

The attendance at the annual or semi-annual x-ray surveys the past few years has shown a noticeable degree of complacency throughout the province including Indians and Metis. The latter groups should be reminded that to rid tuberculosis from their communities, every tuberculin reactor in school, and every adult over school age should have an annual chest x-ray. The tools to eliminate tuberculosis are there, but people do not take advantage of them.

### **Diagnostic Services**

The Division of Tuberculosis Control held stationary clinics in twenty areas throughout the province during 1970 for the review of ex-patients, contacts, previously diagnosed inactive cases, observation cases from surveys, and persons referred by physicians. There were 9,202 persons who attended these clinics. Some patients only required review x-rays, and most of these were carried out locally and sent in for interpretation and reporting. There were 11,485 x-rays submitted and compared for assessment purposes in this group. After combining the clinic and the x-ray only group, there were 120 active pulmonary cases, and 21 active non-pulmonary cases reported.

Family physicians in 1970 demonstrated their excellent co-operation with this Division by referring to our attention 168 of the total 338 new active cases, or 49.7 per cent. We are most grateful for their assistance. The follow-up of contacts by Medical Officers of Health and their nursing staff found 60 new active cases, or 17.8 per cent of the total in 1970. The Provincial and Hospital Laboratories through examination of sputum and/or other specimens, found 43 new active cases or 12.7 per cent of the total, indicating the value of this type of examination in detecting tuberculosis.

The mobile x-ray units, provided by the Alberta Tuberculosis and Respiratory Disease Association, were operated by this Division at 228 locations during 1970, and approximately 75,000 persons attended. Mobile and portable x-ray units operated by the Department of National Health and Welfare, Medical Services, x-rayed about 9,500 persons. The miniature 70 mm. chest x-ray units, operated by the Alberta Tuberculosis and Respiratory Disease Association, in city halls of the major cities, x-rayed 26,250 persons. Routine admission x-rays taken at Provincial Gaols numbered 6,343. The total number of the above x-rays by mass screening was 117,987. There were 53 active cases discovered, and 916 were requested to have further examination; and of these 611 reported, and 20 additional active cases were found, making a total of 73 cases from the above mass surveys.

Tuberculin testing of school personnel and children, using selected grades, has proven to be an effective and economical method of screening for tuberculosis in this group. There were 76,186 children tested, 1,490 being reactors or 1.9%. Of the 11,506 staff

members tested, 574 were reactors or 5%. Food handlers and other special groups are also screened by this method.

All types of mass survey procedures carried out in 1970 gave service to 296,888 persons.

### **Construction**

There were no structural changes made in either Sanatorium in 1970.

### **Treatment Services**

The two provincial Sanatoria had 172 patients on January 1st, 1970, and admitted 594 during the year for a total of 766 treated during the year. The total number of patient days in 1970 was 78,595, an increase compared with 75,563 in 1969. The average stay in hospital was 124.4 days, compared to 131.1 in 1969.

#### **Aberhart Memorial Sanatorium, Edmonton**

In 1970 there were 267 beds set up, but for the greater part of the year one floor was unoccupied. There were 454 admissions, 5 patients transferred in, with 132 in Sanatorium on January 1st, 1970, making a total of 591 patients treated. There were 476 discharges and 8 deaths. The average stay in hospital was 117.2 days or 3.9 months, compared to 5.4 months in 1969.

There were 866 dental procedures carried out by a part-time dentist, and only emergent work being carried out.

The X-ray Department reports that 2,466 x-rays were taken on in-patients, and 8,355 on out-patients.

The Laboratory Department carried out 25,605 procedures in 1970, compared to 28,481 in 1969.

The operating room carried out 15 major operations, and 80 minor ones.

#### **Baker Memorial Sanatorium, Calgary**

There were 55 beds set up for the treatment of tuberculosis, and 145 beds for mentally defective children under the Division of Mental Health.

During 1970 there were 140 patients admitted, 2 transferred in, with 40 under treatment January 1st, 1970, making a total of 182 patients treated. There were 144 discharges and 6 deaths during 1970. The average stay in hospital was 147.3 days or 4.9 months, compared to 5.4 months in 1969.

There were 238 dental procedures carried out by a part-time dentist.

The X-Ray Department reports 885 x-rays taken on in-patients, and 2,836 on out-patients.

The Laboratory Department carried out 10,320 procedures during the year.

There were 9 major operations performed requiring the transfer of patients to the Foothills Hospital, and 80 minor operations were carried out at the Sanatorium.

### **Prevention**

The policy has been to carry out this program on a selective basis, and directed toward high-risk groups. Persons who have had gross exposure to open tuberculosis, and who are reactors to tuberculin with a negative x-ray, are offered chemoprophylaxis, usually using one drug for a period of one year. The same applies to recent converters to tuberculin reactors, and especially

in children. Contacts who are non-reactors two to three months after the contact is broken, are offered B.C.G. vaccination. Chemoprophylaxis using one drug is also used in several other selected groups. In 1970 there were 1,031 B.C.G. vaccinations, while the number on chemoprophylaxis was 400.

### **Education and Rehabilitation**

The usual academic training is provided for students in grades I to IX in both Sanatoria. At the Aberhart Memorial Sanatorium in Edmonton, kindergarten classes are available for pre-school children. The Baker Memorial Sanatorium only requires the services of a part-time teacher to handle the smaller number of children.

The Occupational Therapy Department augments the above, and provides training in many different projects for patients who require several months hospitalization.

The Alberta Tuberculosis and Respiratory Disease Association has continued counselling and rehabilitation programs at both Sanatoria. The change to shortened hospital stay and longer out-patient therapy has noted some carry over of this work into the Out-Patient Department, which has proven to be of definite value to patients.

### **Teaching Programs**

There was a change in the Medical Faculty curriculum in 1969, and in 1970 certain medical students were assigned to work on the wards with Sanatorium physicians for a two-week period.

Affiliate student nurses from the University Hospital Training School have continued to report for a two-week period every fourth week throughout the year. The instructress conducts staff and in-patient educational programs on the alternate two weeks.

Public Health Nurses have attended orientation courses and secretaries of Health Units have visited the Central Registry to become more familiar with follow-up routines and procedures, and the consensus of opinion has rated these exchanges to be of value to the visitors and the visited.

In Calgary, medical staff have given lectures in city hospitals, and to city and public health nurses of Southern Alberta concerning tuberculosis and the provincial control program.

### **Acknowledgements**

I wish to thank the Minister, the Honorable J. D. Henderson, and the Deputy Minister, Dr. P. B. Rose for their support concerning the work of this Division.

The Regional Director, Medical Services, Department of National Health and Welfare, and his nursing staff have further improved the gradual incorporation of all Registered Indians under surveillance for tuberculosis in the province onto the Central Registry. We appreciate the assistance of the Medical Services staff in the management of this group.

The Alberta Tuberculosis and Respiratory Disease Association Directors, the General Secretary and his staff, including mobile x-ray survey organizers, nursing staff, x-ray and clerical staff of stationary x-ray units, as well as rehabilitation staff at the Sanatoria, have again assisted this Division in many phases of activity. This has added a degree of success to our programs that would not have otherwise been possible. We gratefully acknowledge your kind assistance in all these areas.

On behalf of patients and staff of both Sanatoria, I wish to express appreciation to the many church groups, service clubs, volunteer workers, and individuals who have contributed to the welfare and comfort of these patients, through their various projects and activities during the year.

The clergy have again very kindly attended to the spiritual needs of patients, and their service is gratefully acknowledged.

The Data Centre personnel have also been most co-operative, and their assistance to our Central Registry staff concerning the follow-up program is very much appreciated.

To Dr. Ryder, Medical Superintendent, Baker Memorial Sanatorium, and his staff, Dr. Duncan, Medical Superintendent, Aberhart Memorial Sanatorium and his staff, I wish to express my appreciation for the attention given to patient care, and to out-patient clinic services during 1970.

To Division physicians, nurses, x-ray and clerical staff, and all those on Aberhart Memorial Sanatorium staff who faithfully shared Division and hospital duties for many years, prior to January 1st, 1971, a sincere thank you for your kind assistance.

## DIAGNOSTIC CLINICS

## New Cases of Tuberculosis

Stationary Clinics	No. Regular Sessions	Pul.		Non-pul.		Number of Examinations		Total
		Act.	Inact.	Act.	Inact.	New	Rev.	
Aberhart Memorial Sanatorium .....	145	39	38	9	2	1,358	4,891	6,249
Baker Memorial Sanatorium .....	98	18	46	10	3	591	1,836	2,427
Athabasca .....	2	—	—	—	—	—	23	23
Bonnyville .....	2	—	—	—	—	—	42	42
Camrose .....	3	—	—	—	—	—	31	31
Drumheller .....	2	—	—	—	—	—	18	18
Elk Point .....	2	—	—	—	—	—	19	19
Grande Prairie .....	2	—	—	—	—	—	27	27
High Prairie .....	2	—	—	—	—	—	51	51
Lac La Biche .....	2	—	—	—	—	—	39	39
Lethbridge .....	4	—	—	—	—	1	58	59
Medicine Hat .....	2	—	1	—	—	—	28	28
Peace River .....	2	—	—	—	—	—	34	34
Slave Lake .....	1	—	—	—	—	—	15	15
Smoky Lake .....	1	—	—	—	—	—	22	22
St. Paul .....	1	—	—	—	—	—	17	17
Valleyview .....	2	—	—	—	—	—	25	25
Vegreville .....	2	—	—	—	—	—	46	46
Vermilion .....	2	—	—	—	—	—	30	30
TOTAL .....	277	57	85	19	5	1,950	7,252	9,202
*Miscellaneous Clinics .....	—	63	63	2	1	3,392	8,093	11,485
GRAND TOTAL .....	277	120	148	21	6	5,342	15,345	20,687

\*Films sent in from various points and authorized by the Tuberculosis Division

## Number of Injections, Out-patients

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Streptomycin .....	286	585	871

## SCHOOL TUBERCULIN TESTING SURVEY

Health Unit, City or Municipal Nursing District	No. Tested	STUDENTS		New Tub. Cases		No. Tested	STAFF		New Tub. Cases	
		No. Reacted	% Reacted	Act.	Inact.		No. Reacted	% Reacted	Act.	Inact.
Alberta East Central H.U.	4,159	33	.8	—	—	422	16	3.8	—	—
Athabasca H.U.	2,181	114	5.2	—	—	223	82(23)	36.8	—	—
Banff National Park H.U.	133	—	—	—	—	18	1	5.6	—	—
Barons-Eureka H.U.	1,104	1	.1	—	—	383	4	1.0	—	—
Big Country H.U.	1,153	4	.3	—	—	205	2	1.0	—	—
City of Calgary H.U.	15,032	290(89)	1.9	—	—	3,639	157	4.3	—	—
Chief Mountain H.U.	1,022	54(54)	5.3	—	—	36	—	—	—	—
Chinook H.U.	1,677	15	.9	—	—	136	8	5.9	—	—
Drumheller H.U.	2,975	47	1.6	—	—	323	9	2.8	—	—
City of Edmonton H.U.	Not Available	—	—	—	—	Not Available	—	—	—	—
Edson H.U.	2,136	14(6)	.7	—	—	316	5(1)	1.6	—	—
Foothills H.U.	1,531	12	.8	—	—	250	12	4.8	—	—
Fort McMurray District Nurse	182	12	6.6	—	—	56	10	17.9	—	—
Fort Vermilion District Nurse	25	—	—	—	—	5	—	—	—	—
Grande Prairie H.U.	3,957	21	.5	—	—	553	21	3.8	—	—
High Level District Nurse	275	27	9.8	—	—	17	7	41.2	—	—
Jasper National Park H.U.	200	6	3.0	—	—	15	2	13.3	—	—
Leduc-Strathcona H.U.	3,223	46(21)	1.4	—	—	713	21	2.9	—	—
Lethbridge H.U.	2,140	9	.4	—	—	364	8	2.2	—	—
Lacrete Municipal Nurse	346	3	.9	—	—	30	—	—	—	—
Medical Services	1,794	275	15.3	—	—	67	Not Available	—	—	—
Medicine Hat H.U.	2,810	16	.6	—	—	665	21	3.2	—	—
Minburn-Vermilion H.U.	2,324	80	3.4	—	—	284	53	18.7	—	—
Mount View H.U.	2,588	16	.6	—	—	365	9	2.5	—	—
North Eastern Alberta H.U.	3,230	114(34)	3.5	—	—	377	45	11.9	—	—
Peace River H.U.	2,781	38	1.4	—	—	96	8	8.3	—	—
Red Deer H.U.	6,415	144	2.2	—	—	392	27	6.9	—	1
Stony Plain-Lac Ste. Anne H.U.	1,590	19(14)	1.2	—	—	211	10(3)	.5	—	—
Sturgeon H.U.	3,710	15	.4	—	—	602	8	1.3	—	—
Vegreville H.U.	1,563	37	2.4	—	—	305	14	4.6	—	—
County of Warner	649	3	.5	—	—	89	4	4.5	—	—
Wabasca District Nurse	109	1	.9	—	—	3	—	—	—	—
Wetoka H.U.	3,172	24(1)	.8	1	—	346	10	2.9	—	—
TOTAL	76,186	1,490(219)	—	1	—	11,506	574(27)	—	—	1

The number in brackets indicates the number previously given B.C.G.

## MASS X-RAY SURVEYS

	Number X-rayed
Surveys at 155 points in 9 Health Units, 2 Municipal Nursing Districts, Calgary and Edmonton and 14 Indian Reservations .....	75,359
City Hall, Calgary .....	14,929
City Hall, Edmonton .....	8,586
City Hall, Lethbridge .....	1,187
Health Unit Office, Medicine Hat .....	823
Health Unit Office, Red Deer .....	633
Municipal Hospital, Athabasca .....	93
Correctional Institutions: Calgary .....	2,674
Fort Saskatchewan .....	2,969
Lethbridge .....	588
Peace River .....	112
X-ray Unit #6, North .....	200
Laboratory and X-ray School, Edmonton .....	19
Portable X-ray, Private .....	47
Northern Alberta Institute of Technology, Edmonton .....	39
Medical Services .....	9,720
GRAND TOTAL .....	117,978



## DEPARTMENT OF HEALTH

## SUMMARY MASS X-RAY SURVEYS

	T.B. Division	Medical Services	Total
Number x-rayed .....	108,258	9,720	117,978
Probable Tuberculosis, Active .....	11( *7)	42( 31)	53( 38)
Probable Tuberculosis, Inactive .....	1,569(1,466)	435(421)	2,004(1,887)
Pleurisy, Active .....	1	1( 1)	1( 1)
Pleurisy, Inactive .....	504( 312)	51( 39)	555( 351)
Further Examination Requested .....	715	211	926
Non-Tuberculous Chest Conditions:			
(a) Suspect new growth .....	21	—	21
(b) Other .....	807	106	913
Undiagnosed (includes spoiled films) .....	512	77	589
No Disease .....	104,119	8,797	112,916

\*Number in brackets signifies those cases previously recorded.

Of the 926 persons requested to have further examination, 611 are known to have been checked and diagnosed as follows:

	T.B. Division	Medical Services	Total
Tuberculosis, Active or Probably Active .....	17	3	20
Tuberculosis, Inactive .....	41	16	57
Pleurisy, Active .....	1	—	1
Pleurisy, Inactive .....	7	2	9
Further Examinations Requested .....	36	7	43
Non-Tuberculous Disease .....	134	30	164
Suspect Carcinoma .....	—	—	—
No Disease .....	253	64	317

The other 282 have either moved from Alberta, cannot be located or are still on the Follow-up Lists.

\*The other 33 cases requiring further examination were x-rayed at the Correctional Institutes and as the majority of these are transient and therefore most difficult to locate, they are not included in this table.

## SUMMARY CLINICS AND SURVEYS

	Number Checked
Stationary Clinics .....	9,202
Miscellaneous Clinics .....	11,485
Mass Surveys .....	108,258
Other Surveys (Tuberculosis Testing Only) .....	150,181
Medical Services .....	9,720
*Hospital Admission Program .....	3,867
Mental Hospitals .....	4,175
<b>TOTAL .....</b>	<b>296,888</b>

\*Includes only those x-rays sent to the Sanatoria for interpretation.

## SOURCE OF DISCOVERY OF NEW CASES OF TUBERCULOSIS

Of the 338 new active and 175 new inactive cases of tuberculosis, 76 active and 90 inactive were first seen through one of the Out-Patient Clinics prior to establishing a diagnosis. The following table sets forth the sources of discovery giving credit to the programs which actually instigated the investigation for tuberculosis either by referral to the Out-Patient Clinics, or Sanatorium admission.

	Total	1969 %	Active	Total	1970 %	Active	% Active
Family Doctors .....	199	30.8	160	199	38.7	168	49.7
Mobile Units .....	39	6.0	7	34	6.6	19	5.6
Contacts .....	61	9.5	57	67	13.1	60	17.8
District Nurses .....	10	1.6	9	4	.8	3	.8
Department of National Health and Welfare:							
(a) D.V.A. or National Defence .....	2	.3	—	1	.2	—	—
(b) Indian Health Services .....	60	9.3	31	25	4.9	12	3.6
(c) Immigrants .....	137	21.2	8	67	13.1	3	.8
Previously diagnosed other Provinces or Countries .....	27	4.2	4	31	6.0	5	1.5
School Surveys .....	16	2.5	5	2	.4	1	.3
City Hall X-ray Units .....	22	3.4	9	15	2.9	8	2.4
Food Handlers .....	3	.5	1	2	.4	—	—
Correctional Institutions .....	15	2.3	8	4	.8	4	1.2
Provincial and Hospital Laboratories .....	13	2.0	13	43	8.4	43	12.7
Mental Hospitals .....	9	1.4	5	5	1.0	1	.3
Miscellaneous Surveys .....	12	1.9	9	4	.8	2	.6
Cancer Clinic .....	1	.2	1	—	—	—	—
Miscellaneous Sources .....	19	2.9	16	10	1.9	9	2.7
<b>TOTAL .....</b>	<b>645</b>		<b>343</b>	<b>513</b>		<b>338</b>	

## CLASSIFICATION OF NEW CASES OF ACTIVE AND INACTIVE TUBERCULOSIS

	Active	1969 Inactive	Total	Active	1970 Inactive	Total
Minimal .....	50	228	278	49	123	172
Moderately Advanced .....	78	43	121	76	34	110
Far Advanced .....	44	5	49	45	3	48
Primary .....	104	6	110	82	7	89
Tuberculous Pleurisy with Effusion and evidence of previous pleurisy .....	13	14	27	12	2	14
Non-respiratory Tuberculosis .....	52	6	58	71	6	77
Miliary .....	2	—	2	3	—	3
<b>TOTAL .....</b>	<b>343</b>	<b>302</b>	<b>645</b>	<b>338</b>	<b>175</b>	<b>513</b>

## NEWLY DISCOVERED AND REACTIVATED CASES ACCORDING TO RESIDENCE (PUBLIC HEALTH SUPERVISION)

Health Unit	New Active			Re-activated			Total Active			Total New Cases		
		%	*Rate		%	*Rate		%	*Rate	Active	Inactive	Total
Alberta East Central .....	4	1.2	7.8	—	—	—	4	1.0	7.8	4	2	6
Athabasca .....	8	2.4	35.9	3	7.5	13.5	11	2.9	49.4	8	4	12
Banff National Park .....	—	—	—	—	—	—	—	—	—	—	—	—
Barons-Eureka .....	2	.6	7.6	—	—	—	2	.5	7.6	2	1	3
Big Country .....	1	.3	6.9	—	—	—	1	.3	6.9	1	—	1
Chief Mountain .....	—	—	—	—	—	—	—	—	—	—	—	—
Chinook .....	4	1.2	17.8	—	—	—	4	1.0	17.8	4	3	7
Drumheller .....	2	.6	7.2	1	2.5	3.6	3	.8	10.8	2	4	6
Edson .....	2	.6	7.9	1	2.5	3.9	3	.8	11.8	2	2	4
Foothills .....	2	.6	9.3	—	—	—	2	.5	9.3	2	3	5
Grande Prairie .....	5	1.5	13.4	2	5.0	5.4	7	1.9	18.8	5	3	8
Jasper National Park .....	—	—	—	—	—	—	—	—	—	—	1	1
Leduc-Strathcona .....	2	.6	5.1	—	—	—	2	.5	5.1	2	4	6
Lethbridge .....	6	1.7	15.2	—	—	—	6	1.6	15.2	6	1	7
Medicine Hat .....	6	1.7	12.1	—	—	—	6	1.6	12.1	6	2	8
Minburn-Vermilion .....	6	1.7	21.3	—	—	—	6	1.6	21.3	6	—	6
Mount View .....	1	.3	3.2	—	—	—	1	.3	3.2	1	3	4
North Eastern Alberta .....	20	6.0	52.6	4	10.0	10.5	24	6.3	63.1	20	7	27
Peace River .....	14	4.2	37.3	3	7.5	8.0	17	4.5	45.3	14	6	20
Red Deer .....	7	2.1	10.0	—	—	—	7	1.9	10.0	7	6	13
Stony Plain-Lac Ste. Anne .....	6	1.7	23.7	1	2.5	3.9	7	1.9	27.6	6	1	7
Sturgeon .....	2	.6	3.5	—	—	—	2	.5	3.5	2	2	4
Vegreville .....	3	.8	10.4	—	—	—	3	.8	10.4	3	2	5
County of Warner .....	—	—	—	—	—	—	—	—	—	—	—	—
Wetoka .....	8	2.4	26.7	—	—	—	8	2.1	26.7	8	4	12
City of Calgary .....	57	16.8	14.8	2	5.0	.5	59	15.6	15.3	57	46	103
City of Edmonton .....	83	24.6	19.6	14	35.0	3.3	97	25.7	22.9	83	41	124
Miscellaneous (areas not included in above listings) .....	7	2.1	—	—	—	—	7	1.9	—	7	5	12
Registered Indians .....	80	23.7	283.4	9	22.5	31.9	89	23.5	315.3	80	20	100
No Fixed Abode .....	—	—	—	—	—	—	—	—	—	—	2	2
<b>TOTAL FOR PROVINCE .....</b>	<b>338</b>	<b>100.0</b>	<b>21.4</b>	<b>40</b>	<b>100.0</b>	<b>2.5</b>	<b>378</b>	<b>100.0</b>	<b>23.9</b>	<b>338</b>	<b>175</b>	<b>513</b>

\*Rate per 100,000 of population

## ACTIVE CASES AMONG REGISTERED INDIANS

Agency	Population	New Active		Re-activated		Total Active		*Rate	
		1969	1970	1969	1970	1969	1970	1969	1970
<b>Edmonton/Hobbema .....</b>	<b>5,436</b>	<b>12</b>	<b>11</b>	<b>1</b>	<b>3</b>	<b>13</b>	<b>14</b>	<b>238.5</b>	<b>257.6</b>
Alexis Band .....	489	4	4	—	2	4	6	—	—
Louis Bull Band .....	436	1	—	—	—	1	—	—	—
Enoch Band .....	471	2	2	—	—	2	2	—	—
Pauls Band .....	571	2	2	—	1	2	3	—	—
Alexanders Band .....	497	—	—	—	—	—	—	—	—
Montana Band .....	255	—	—	—	—	—	—	—	—
Ermieskin Band .....	911	1	1	—	—	1	1	—	—
Samson Band .....	1,801	2	2	1	—	3	2	—	—
General List .....	5	—	—	—	—	—	—	—	—
<b>Fort Vermilion .....</b>	<b>2,346</b>	<b>11</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>12</b>	<b>9</b>	<b>510.2</b>	<b>383.9</b>
Little Red River Band .....	870	7	1	—	—	7	1	—	—
Slave Lake Band .....	1,010	4	5	1	1	5	6	—	—
Tallcree Band .....	203	—	2	—	—	—	2	—	—
Boyer River Band .....	263	—	—	—	—	—	—	—	—
<b>Lesser Slave Lake .....</b>	<b>3,727</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>8</b>	<b>8</b>	<b>212.1</b>	<b>214.6</b>
Driftpile Band .....	493	1	—	—	—	1	—	—	—
Sucker Creek Band .....	455	—	—	—	1	—	1	—	—
Swan River Band .....	138	—	—	—	—	—	—	—	—
Sawridge Band .....	39	—	—	—	—	—	—	—	—
Duncans Band .....	44	—	1	—	—	—	1	—	—
Horse Lake Band .....	105	1	—	—	—	1	—	—	—
Sturgeon Lake Band .....	620	2	1	1	—	3	1	—	—
Whitefish Lake Band .....	444	—	3	1	—	1	3	—	—
Bigstone Band .....	1,289	—	1	2	1	2	2	—	—
Luhicon Lake Band .....	52	—	—	—	—	—	—	—	—
Grouard Band .....	48	—	—	—	—	—	—	—	—
<b>Saddle Lake/Athabasca .....</b>	<b>6,022</b>	<b>44</b>	<b>31</b>	<b>2</b>	<b>2</b>	<b>46</b>	<b>33</b>	<b>761.8</b>	<b>547.9</b>
Cree Band .....	726	12	12	—	—	12	12	—	—
Saddle Lake Band .....	2,456	4	3	1	—	5	3	—	—
Fort Chipewyan Band .....	240	13	1	—	—	13	1	—	—
Cold Lake Band .....	840	1	11	—	—	1	11	—	—
Frog Lake Band .....	580	1	3	—	—	1	3	—	—
Kehewin Band .....	471	7	—	1	—	8	—	—	—
Beaver Lake Band .....	199	2	—	—	1	2	1	—	—
McKay Band .....	173	—	—	—	1	—	1	—	—
Fort McMurray Band .....	90	—	—	—	—	—	—	—	—
Heart Lake Band .....	69	—	—	—	—	—	—	—	—
Janvier Band .....	178	4	1	—	—	4	1	—	—
<b>Stony/Sarcee .....</b>	<b>5,028</b>	<b>10</b>	<b>15</b>	<b>—</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>199.9</b>	<b>318.2</b>
Chiniquay Band .....	437	2	—	—	1	2	1	—	—
Sarcee Band .....	466	—	—	—	—	—	—	—	—
Sunchild Cree Band .....	288	—	6	—	—	—	6	—	—
O'Chiese Band .....	311	1	1	—	—	1	1	—	—
Bearspaw Band .....	608	1	3	—	—	1	3	—	—
Wesley Band .....	567	2	2	—	—	2	2	—	—
Blackfoot Band .....	2,351	4	3	—	—	4	3	—	—
<b>Blood/Peigan .....</b>	<b>5,674</b>	<b>2</b>	<b>7</b>	<b>—</b>	<b>—</b>	<b>2</b>	<b>7</b>	<b>35.1</b>	<b>123.4</b>
Blood Band .....	4,260	2	6	—	—	2	6	—	—
Peigan Band .....	1,414	—	1	—	—	—	1	—	—
Non-Resident .....	—	7	2	—	1	7	3	—	—
<b>TOTAL .....</b>	<b>28,233</b>	<b>90</b>	<b>80</b>	<b>8</b>	<b>10</b>	<b>98</b>	<b>90</b>		

\*Rate refers to 100,000 per Agency Population

## DEPARTMENT OF HEALTH

Number of cases re-activated (includes 9 Registered Indians and 6 Unregistered Indians).....	40	
Number of new cases non-residents diagnosed tuberculosis (includes 48 Immigrants) .....	65	(13 active)
Number of new cases, Registered Indians, diagnosed Tuberculosis .....	100	(80 active)
Number of new cases, Unregistered Indians, diagnosed Tuberculosis .....	66	(62 active)
Number with active or re-activated disease on out-patient drug therapy only .....	31	
Number of patients discharged continuing therapy .....	395	
*Number of patients with active disease on out-patient therapy not notifiable in Alberta...	11	
Number of patients on chemoprophylaxis .....	400	
(Includes)		
(a) patients previously diagnosed inactive tuberculosis with inadequate or no previous therapy .....	153	
(b) positive reactors with no active tuberculous disease (includes contacts) .....	221	
(c) positive reactors with non-tuberculous conditions .....	26	

\*Includes those cases long active and those previously notified from another province.

## OLD TUBERCULIN DISTRIBUTED DURING 1970

	BMS	AMS	Total
Dilution #2 .....	58	114	172
Dilution #3 .....	253	586	839
Dilution #4 .....	66	—	66
Purified Protein Derivative (Heaf type) .....	178	2,443	2,621
TOTAL .....	555	3,143	3,698

During the year 1970 Purified Protein Derivative (Mantoux Type) was put into use. This solution was distributed throughout the province in the following amounts.

1 T.U. ....	184
5 T.U. ....	1,006
10 T.U. ....	151
250 T.U. ....	67
TOTAL .....	1,408

## B.C.G. VACCINATIONS 1970

1. Nurses: (a) Graduates .....	3
(b) Students .....	491
(c) Other Nursing Personnel .....	439
2. All Other Hospital Personnel .....	25
3. Medical Students .....	10
4. Indians and Eskimos .....	—
(a) Newborns .....	—
(b) Adults and Children .....	—
5. All Other Persons .....	—
(a) Newborns, contact .....	1
(b) Adults and Children, contacts .....	1
(c) Newborns, not contacts .....	61
(d) Adults and Children, not contacts .....	—
TOTAL .....	1,031

## INSTITUTIONAL REPORT

	BMS	AMS
Number of patients under treatment January 1, 1970 .....	40	132
Number admitted during 1970 .....	140	454
Number transferred in during 1970 .....	2	5
Number treated during 1970 .....	182	591
Number discharged and died during 1970 .....	150	482
Number transferred out during 1970 .....	1	4
Number transferred out, discharged or died during 1970 .....	151	486
Number under treatment December 31, 1970 .....	31	105

T.B. Division

Number of patients under treatment January 1, 1970 .....	172
Number of admissions during 1970 .....	594
Number of patients treated during 1970 .....	766

## DIAGNOSIS OF PATIENT ADMISSIONS—TUBERCULOSIS DIVISION

ACTIVE TUBERCULOSIS—PULMONARY		BMS	AMS
Minimal .....	11	41	
Moderately Advanced .....	30	105	
Far Advanced .....	20	60	
Miliary .....	2	2	
Primary .....	18	62	
Pleurisy .....	5	12	
ACTIVE TUBERCULOSIS—NON-PULMONARY			
Adenitis .....	6	14	
Genito-Urinary .....	6	16	
Pelvic .....	1	1	
Chest Wall Abscess .....	3	—	
Bone .....	2	14	
Symphysis Pubis .....	1	—	
Erythema Nodosum .....	—	1	
Meningitis .....	—	1	
Pericarditis .....	—	1	
Tuberculosis Inactive .....	—	37	
Non-Tuberculous Disease .....	—	43	
Positive Reactors Only .....	2	—	
For Diagnosis .....	33	44	
TOTAL .....	140	454	



	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Number of re-admissions during 1970 .....	16	154	170
Number both admitted and re-admitted during 1970 .....	2	64	66
Number of patient days .....	15,124	45,647	60,771
Number of patient days in other provinces under Reciprocal Agreement .....			601
Total number of patient days including those in other provinces under Reciprocal Agreement .....			61,372
Number of patients in other provinces (Reciprocal Agreement January 1, 1970) .....			2
Number of admissions in other provinces under Reciprocal Agreement .....			4
Number of institutional patient days provided for non-residents in Alberta under Reciprocal Agreement .....			588
Number of patients in Alberta Sanatoria, non-residents, under Reciprocal Agreement, January 1, 1970 .....			3
Number of admissions, non-residents, under Reciprocal Agreement in 1970 .....			5
Number of active tuberculosis cases admitted for treatment who have a history of inactive tuberculosis, and who are not known to have been admitted for treatment anywhere previously .....			26
Number of "chronic alcoholics" admitted .....			21
Number of cases suspect carcinoma either on admission or by X-ray .....			34
Number of patients left against advice .....			52

## OPERATING ROOM REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
<b>CHEST OPERATIONS:</b>			
Major:			
Lobectomies .....	4	1	5
Segmental Resections .....	1	3	4
Wedge Resections .....	—	1	1
Removal of Plombage .....	—	1	1
Thoracoplastics .....	—	1	1
Thoracotomies .....	—	1	1
Pneumonectomies .....	—	1	1
Minor:			
Chest Aspirations .....	22	14	36
Pleural Biopsies .....	9	2	11
Bronchoscopies .....	4	31	35
Insertion Intercostal Drainage Tubes .....	—	1	1
Excision of Wax Pack .....	—	1	1
<b>GENITO-URINARY OPERATIONS:</b>			
Major:			
Nephrectomies .....	2	—	2
Ureterectomies .....	1	—	1
Minor:			
Cystoscopy and Retrograde Pyelogram .....	—	2	2
Drainage and Curettage .....	—	1	1
<b>ORTHOPAEDIC OPERATIONS:</b>			
Major:			
Intravertebral Fusions .....	—	1	1
Anterior Spinal Fusions .....	—	1	1
Arthrodesis Right Hip .....	—	1	1
Minor:			
Plaster Cast Applications .....	1	6	7
<b>OTHER MAJOR OPERATIONS:</b>			
Small Bowel Resections .....	1	—	1
Cholecystectomies .....	—	1	1
Hernia Repairs .....	—	1	1
<b>OTHER MINOR OPERATIONS:</b>			
Insertion of Percorten Pellets .....	4	3	7
Scalene Node Biopsies .....	2	10	12
Skin Biopsies .....	3	—	3
Initial Pneumoperitoneums .....	—	3	3
Excision of Auxillary Glands .....	—	2	2
Aspirations (Other than chest) .....	10	1	11
Bone Marrow Biopsy .....	—	1	1
Incision of Abscess .....	—	1	1
Excision Cervical Nodes .....	—	1	1
<b>TOTAL</b> .....	<b>64</b>	<b>94</b>	<b>158</b>

N.B. All major surgery for the Baker Memorial Sanatorium was done at the Foothills General Hospital in Calgary.

DEPARTMENT OF HEALTH

NUMBER OF PATIENTS DISCHARGED ON DRUGS 1970

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Isoniazid, Para-amino Salicylic Acid and Streptomycin .....	34	9	43
Isoniazid and Para-amino Salicylic Acid .....	48	144	192
Isoniazid and Streptomycin .....	3	9	12
Isoniazid .....	1	16	17
Isoniazid, Ethambutal and Streptomycin .....	2	2	4
Isoniazid, and Ethambutal .....	13	45	58
Isoniazid, Ethambutal and Isoxyl .....	2	—	2
Isoniazid and Isoxyl .....	3	—	3
Isoniazid, Isoxyl and Streptomycin .....	1	—	1
Isoniazid, Ethambutal and Para-amino Salicylic Acid .....	2	3	5
Ethambutal and Para-amino Salicylic Acid .....	1	—	1
Ethambutal and Isoxyl .....	1	—	1
Ethambutal and Cycloserine .....	—	1	1
Streptomycin and Pycamisan .....	—	1	1
Streptomycin, Ethionamide and Ethambutal .....	—	1	1
Pycamisan .....	—	19	19
Pycamisan and Isoniazid .....	—	8	8
Isoniazid, Pyrazinamide and Ethambutal .....	—	3	3
Isoniazid, Pyrazinamide .....	—	2	2
Parasol .....	—	2	2
Pyrazinamide and Ethambutal .....	—	3	3
Isoniazid and Ethionamide .....	—	3	3
Isoniazid and Sodium Para-amino Salicylic Acid .....	—	4	4
Isoniazid Ethambutal and Ethionamide .....	—	2	2
Streptomycin and Para-amino Salicylic Acid .....	—	1	1
Isoniazid, Para-amino Salicylic Acid and Ethionamide .....	—	1	1
Pyrazinamide, Streptomycin and Ethambutal .....	—	1	1
Pyrazinamide, Ethionamide and Ethambutal .....	—	1	1
Isoniazid, Ethionamide and Streptomycin .....	—	1	1
Isoniazid, Para-amino Salicylic Acid and Pycamisan .....	—	1	1
Streptomycin .....	—	1	1
TOTAL .....	111	284	395

LABORATORY REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
SPUTUM EXAMINATIONS:			
Positive .....	173	746	919
Negative .....	1,044	3,023	4,067
TOTAL .....	1,217	3,769	4,986
URINE EXAMINATIONS .....	2,682	7,619	10,301
BLOOD EXAMINATIONS:			
Blood Counts .....	1,576	7,063	8,639
Sedimentation Rates .....	547	3,116	3,663
Blood Sugars .....	209	873	1,082
TOTAL .....	2,332	11,052	13,384
MISCELLANEOUS:			
Pleural Fluid .....	19	7	26
Spinal Fluid .....	—	9	9
Gastric Analysis .....	2	—	2
Culture .....	2,620	2,700	5,320
Guinea Pig Inoculation .....	331	21	352
Other .....	980	6,868	7,848
TOTAL .....	3,952	9,605	13,557
WASSERMAN REPORT:			
Positive .....	8	20	28
Negative .....	129	293	422
TOTAL .....	137	313	450

DENTAL REPORT

Number of patients (individuals) .....	102	212	314
Number of treatments .....	31	317	348
Number of prophylactic treatments .....	—	8	8
Number of fillings .....	26	121	147
Number of extractions .....	79	126	205
Number of new dentures and repairs .....	—	82	82
TOTAL .....	238	866	1,104

## X-RAY DEPARTMENT REPORT

RADIOGRAPHS MADE:	Baker Memorial Sanatorium		Aberhart Memorial Sanatorium		Total		Grand Total
	In Pts.	Out Pts.	In Pts.	Out Pts.	In Pts.	Out Pts.	
Chest—Full Size .....	551	1,629	1,977	3,622	2,528	5,251	7,779
Miniature .....	—	1,157	—	4,596	—	5,753	5,753
Ribs .....	—	—	2	4	2	4	6
Pelvis .....	8	3	17	2	25	5	30
Extremities .....	27	5	119	42	146	47	193
Spines—Cervical .....	4	—	11	1	15	1	16
Dorsal .....	7	9	17	5	24	14	38
Lumbar .....	7	9	32	10	39	19	58
Skull .....	—	—	9	—	9	—	9
Sinuses .....	—	—	2	—	2	—	2
F. P. Abdomen .....	1	—	6	—	7	—	7
G. B. Series .....	1	—	12	—	13	—	13
G. I. Series .....	—	—	—	—	—	—	—
Barium Enema .....	—	—	—	—	—	—	—
Intravenous Pyelogram .....	25	20	52	12	77	32	109
Retrograde Pyelogram .....	4	—	5	1	9	1	10
Sinogram .....	6	—	—	—	6	—	6
Bronchogram .....	48	—	19	1	67	1	68
Ordographs (body section radiography) .....	180	4	85	59	265	63	328
Dental .....	16	—	101	—	117	—	117
<b>TOTAL</b> .....	<b>885</b>	<b>2,836</b>	<b>2,466</b>	<b>8,355</b>	<b>3,351</b>	<b>11,191</b>	<b>14,542</b>
Audiograms .....	1	—	—	—	1	—	1
Fluoroscopic Examinations..	19	—	—	—	19	—	19
Films sent in for interpretation .....	13,213	—	12,886	—	—	—	26,099
Basal Metabolism Rate .....	—	—	—	—	—	—	—
Cardiograph .....	35	—	234	—	—	—	269

## CLASSIFICATION ON ADMISSION OF 632 DISCHARGED PATIENTS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
For diagnosis .....	32	79	111
Primary Tuberculosis .....	16	86	102
Pulmonary Tuberculosis .....	76	249	325
Tuberculous Pleurisy .....	4	9	13
Non-pulmonary Tuberculosis .....	20	59	79
Positive Reactor Only .....	2	—	2
<b>TOTAL</b> .....	<b>150</b>	<b>482</b>	<b>632</b>

## CLASSIFICATION ON DISCHARGE OF CASES OF TUBERCULOSIS AND TUBERCULOUS PLEURISY (TUBERCULOSIS DIVISION ONLY)

	On Admission			On Discharge		Died
	Number	Improved	Quiescent	Unimproved	Inactive	
Minimal .....	75	53	2	2	15	1
Moderately Advanced .....	160	123	7	9	17	4
Far Advanced .....	85	66	2	3	10	4
Primary .....	106	91	6	—	9	—
Miliary .....	2	2	—	—	—	—
Non-pulmonary Tuberculosis.....	78	65	2	1	7	3
Tuberculous Pleurisy .....	13	12	—	1	—	—
<b>TOTAL</b> .....	<b>519</b>	<b>412</b>	<b>19</b>	<b>18</b>	<b>58</b>	<b>12</b>

2 cases classified tuberculous on admission were discharged non-tuberculous.

## RESIDENCE OF DISCHARGED PATIENTS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
<b>SUMMARY:</b>			
Cities .....	73	178	251
Towns .....	—	5	5
Local Improvement Districts .....	—	71	71
Health Units .....	72	222	294
Non-Residents .....	5	6	11
<b>TOTAL</b> .....	<b>150</b>	<b>482</b>	<b>632</b>

## SEX OF DISCHARGED PATIENTS (TUBERCULOSIS DIVISION)

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Male .....	77	258	335
Female .....	73	224	297
<b>TOTAL</b> .....	<b>150</b>	<b>482</b>	<b>632</b>



## DEPARTMENT OF HEALTH

## AGE ON ADMISSION OF DISCHARGED PATIENTS (TUBERCULOSIS DIVISION)

4 years and under .....	13	55	68
From 5 - 9 years .....	7	35	42
From 10 - 14 years .....	3	27	30
From 15 - 19 years .....	6	24	30
From 20 - 24 years .....	14	33	47
From 25 - 29 years .....	5	36	41
From 30 - 34 years .....	8	36	44
From 35 - 39 years .....	8	30	38
From 40 - 44 years .....	11	25	36
From 45 - 49 years .....	13	31	44
From 50 - 54 years .....	9	27	36
From 55 - 59 years .....	14	26	40
From 60 - 69 years .....	15	45	60
From 70 - 79 years .....	17	37	54
80 years and over .....	7	15	22
TOTAL .....	150	482	632

## SOCIAL STATUS OF DISCHARGED PATIENTS (TUBERCULOSIS DIVISION)

Single .....	56	222	278
Married .....	82	164	246
Divorced .....	3	13	16
Separated .....	—	36	36
Widowed .....	9	47	56
TOTAL .....	150	482	632

## DISCHARGED PATIENTS OF NON-WHITE ORIGIN (TUBERCULOSIS DIVISION)

Registered Indians .....	32	144	176
Metis .....	1	138	139
East Indian .....	5	2	7
Chinese .....	3	7	10
Japanese .....	1	2	3
Negro .....	—	3	3
Philippino .....	1	—	1
TOTAL .....	43	296	339

## RESIDENCE IN ALBERTA OF DISCHARGED PATIENTS (TUBERCULOSIS DIVISION)

	Baker Memorial Sanatorium			Aberhart Memorial Sanatorium		
	Canadian Born (exclusive of Reg. Indians)	Foreign Born	Registered Indians	Canadian Born (exclusive of Reg. Indians)	Foreign Born	Registered Indians
Under 1 year .....	—	—	—	9	2	6
1 - 5 years .....	3	1	10	39	12	27
6 - 9 years .....	—	—	6	16	1	10
10 - 14 years .....	1	—	2	13	5	19
15 - 19 years .....	3	1	4	19	4	7
20 - 29 years .....	5	6	2	49	4	23
30 or more years..	48	46	7	113	49	49
TOTAL .....	60	54	31	258	77	141
Non-Resident—11						

## LENGTH OF STAY IN SANATORIUM OF DISCHARGED PATIENTS (TUBERCULOSIS DIVISION)

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
DEATHS			
Number in Sanatorium under 31 days .....	5	2	7
Number of patient days .....	37	22	59
Average number of patient days .....	7.5	11	8.4
Number in Sanatorium 31 or more days .....	3	6	9
Number of patient days .....	954	831	1,785
Average number of patient days .....	318.0	138.5	198.3
DISCHARGES			
Number in Sanatorium under 31 days .....	36	127	163
Number of patient days .....	493	1,852	2,345
Average number of patient days .....	13.7	14.6	14.4
Number in Sanatorium 31 or more days .....	106	347	453
Number of patient days .....	20,606	53,800	74,406
Average number of patient days .....	194.4	160.8	164.3
Total number of deaths and discharges .....	150	482	632
Total number of patient days .....	22,090	56,505	78,595
Average number of patient days .....	147.3	117.2	124.4

# DIVISION OF MENTAL HEALTH

A. R. Schrag, M.D., C.R.C.P.(C), Director to September 30

F. J. Edwards, M.D., C.M., C.R.C.P.(C), Acting Director from October 1

The Division through its hospitals for mental illness and mental retardation and its guidance clinics continued to provide service to that segment of the population requiring treatment and care services that, seemingly, for various reasons, could not be effectively provided in any other setting or manner. Rehabilitation programs, of various kinds, were emphasized and increased in scope. The demand for hospital care and training of mental retardates continued at a high level.

The new Infirmary Building at the Alberta Hospital, Edmonton, was scheduled to open in the early part of 1971 and, as a result, treatment of geriatric and physically ill patients will be enhanced.

Bursary assistance was provided through professional training grants to six persons taking training in Social Work, four in Psychology, and 11 physicians taking specialty training in Psychiatry.

Several research projects were undertaken and these are enumerated in the Division report.

The capacities and number of patients in residence as of December 31 were as follows:

Hospital	Capacity	Patients in Residence
<b>ACTIVE TREATMENT MENTAL HOSPITALS:</b>		
Alberta Hospital, Edmonton .....	900	846 (1)
Alberta Hospital, Ponoka .....	770	693 (2)
<b>CONTINUED TREATMENT HOSPITALS:</b>		
Alberta Hospital, Claresholm .....	350	393 (3)
Alberta Hospital, Raymond .....	70	73 (4)
Rosehaven, Camrose .....	350	335
<b>FACILITIES FOR THE MENTALLY RETARDED:</b>		
Alberta School Hospital, Red Deer ....	970	792 (5)
Deerhome, Red Deer .....	1,141	1,214 (6)
<b>EMOTIONALLY DISTURBED CHILDREN'S UNIT</b>		
Linden House, Red Deer .....	14	8 (7)
<b>TOTAL .....</b>	<b>4,565</b>	<b>4,354</b>

On leave or otherwise absent:

(1) 145; (2) 79; (3) six; (4) three; (5) 223; (6) 113; (7) five.

## ADMINISTRATION

Nineteen seventy continued to be a year of change in the Service. Programs continued to undergo some modification with increased emphasis on rehabilitation. Continued difficulty was experienced in recruiting specialists in Psychiatry; there was improvement in other areas of recruiting.

There were changes in senior personnel. Dr. A. R. Schrag, who had given 37 years of loyal service in the Division and who was Director for four years, retired October 1, 1970. Miss A. M. Hill, Director of Nursing, Alberta Hospital, Claresholm, retired after long and devoted service; she was replaced by Mrs. J. A. McDonald. Mr. C. C. Henry, Business Manager, Rosehaven, Camrose, retired, after being in the position since the opening of the hospital in 1947; he was replaced by Mr. W. L. Marshall.

Executive Directors were appointed to the Alberta Hospital, Edmonton, and Alberta Hospital, Ponoka.

The new Infirmary Building at the Alberta Hospital, Edmonton, was under construction and will be in

operation early in 1971. This facility will greatly improve the care and treatment of geriatric and physically ill patients.

Admissions continued to drop at the Alberta Hospital, Ponoka, being 256 less than 1969. Admissions were at a high level at the Alberta Hospital, Edmonton, with an average of over 200 per month; the total admissions exceeding 1969 by 348. Patients on the Books declined at the Alberta Hospitals — Edmonton, Ponoka, and Claresholm — and also Rosehaven, Camrose.

## In-Service Training of Staff

All hospitals provided orientation and basic instruction for new untrained staff. In addition, various staff members throughout the Division, including medical, nursing, social work, psychology, housekeeping, administration, fire fighting personnel, continued to attend conferences, seminars, workshops or special training sessions of a divisional, provincial, or national nature. Thirteen Occupational Therapy Aides from five hospitals attended a special six-week course at the University of Alberta School of Occupational Therapy.

Members of the staff of the active treatment hospitals and larger guidance clinics participated in an educational program of training of specialists, social workers and psychologists.

## Research

Funds were made available by the Department for the completion of four studies:

Impairment of Transitivity of Color Preference in Normal and Chronic Alcoholic Adults Attributable to Shifting Relations of Stimulus Items

Impairment of Transitivity of Color Preference in Normal and Emotionally Disturbed Children Attributable to Shifting Relations of Stimulus Items

The Relationship of the Alberta Guidance Clinic Progressive Evaluation Scale Items to Opportunity and Parent-Teacher Attitudes

Behaviour Modification and Speech Development

in co-operation with the Departments of Psychology of The University of Alberta and The University of Calgary.

A special research project on aversive conditioning in regard to Alcoholism was initiated by the Psychology Department of the Alberta Hospital, Edmonton.

## Advisory Committee Under The Psychiatric Nursing Training Act

This Committee continued to meet six times a year and its sessions were productive.

A new two-year course in Psychiatric Nursing commenced at the Alberta Hospital, Edmonton, and the Alberta Hospital, Ponoka.

Certificates of Eligibility in Psychiatric Nursing or Mental Deficiency Nursing were issued to 89 persons. These persons may receive Certificates of Qualification after working in an appropriate Alberta hospital setting for a minimum of three months. In addition 169 Certificates of Qualification in Psychiatric Nursing or Mental Deficiency Nursing were issued.

Forty-three persons graduated in Psychiatric Nursing at the Alberta Hospital, Edmonton, and Alberta Hospital, Ponoka. Ten persons graduated as combined General and Psychiatric Nurses at the Alberta Hospital, Ponoka. Thirty-two persons graduated as Mental Deficiency Nurses at the Alberta School Hospital, Red Deer.

Refresher Courses for graduate Psychiatric Nurses were given at the Alberta Hospital, Edmonton, and the Alberta Hospital, Ponoka.

### Review Panels

The Review Panel procedure allows a patient to complain against his detention in a mental hospital.

The Review Panels continued to function satisfactorily. There was a slight increase in the total number of complaints submitted to the Review Panel — 88 as against 85 in 1969. Seventeen certificates were found to be no longer warranted. At the Alberta Hospital, Edmonton, there was a total of 48 complaints from 43 patients; 11 certificates were revoked. At the Alberta Hospital, Ponoka, there was a total of 40 complaints from 37 patients; six certificates were revoked. Considering the number of persons admitted by certificate(s) and the number of patients requiring renewal or detention certificates, the number of complaints against the issuance of certificates was very small indeed.

**Table 1** shows the hospital population on books and in residence for each hospital since December 31, 1956.

**Table 2** provides a consolidation of admissions and discharges for each of the hospitals for 1970; **Table 2a** shows mode of admission.

**Table 3** provides a summary of causes of death by hospital for all deaths in facilities of the Division.

**Table 4** provides a consolidated table giving the age at death for each of the hospitals.

### PREVENTIVE SERVICES

The Guidance Clinics functioned much as in the previous year. There was an increase in the total number of persons seen in the Clinics and there was an increase in the total workload. As well there was an increase in the total of professional staff in the full-time clinics. Fortunately the Grande Prairie Guidance Clinic again became fully operative by year's end.

The percentage of persons examined under 21 years of age was 87.9%.

The major referral sources were: schools — 31.5%, parents or relatives — 24.3%, and physicians — 20.9%.

The major recommendations were: Treatment in the Clinic — 30.8%, Miscellaneous or Other Recommendations — 17.5%, Educational Advice — 17.4%, and Modified Home Management — 16.2%.

Mental retardation of varying degrees was diagnosed in 664 cases or 18.6% of the total number of cases seen in the Clinics.

Tables 6 to 12 provide more detailed information as to diagnosis, age and sex of clients, recommendations, and a summary of the numbers diagnosed as mental retardates in the past five years.

The detailed reports of each of the Clinics follow the consolidated tables.



TABLE 1  
ALBERTA HOSPITAL POPULATION BY YEARS

Year	A.H. Edmonton	A.H. Ponoka	Total In Active Treatment	A.H. Clareholm	A.H. Raymond	Rosehaven	Total Mental Disorders	Deerhome	School Hospital	Total Defective	Total
1956	On Books	1,641	1,572	3,213	97	134	505	—	698	698	4,647
1,123,116	In Res.	1,512	1,521	3,033	96	134	505	—	698	698	4,466
1957	On Books	1,646	1,575	3,221	97	133	501	—	707	707	4,659
1,160,000	In Res.	1,543	1,523	3,066	96	133	501	—	707	707	4,503
1958	On Books	1,608	1,426	3,034	100	132	495	335	758	1,093	4,854
1,201,000	In Res.	1,434	1,378	2,812	98	132	495	335	758	1,093	4,630
1959	On Books	1,609	1,102	2,711	110	136	503	675	734	1,409	4,869
1,243,000	In Res.	1,427	1,034	2,461	106	136	503	675	734	1,409	4,615
1960	On Books	1,621	1,130	2,751	111	131	505	811	756	1,567	5,065
1,283,000	In Res.	1,410	1,052	2,462	105	131	505	811	756	1,567	4,770
1961	On Books	1,613	1,269	2,882	112	132	502	830	718	1,548	5,176
1,331,944	In Res.	1,456	1,174	2,630	108	131	503	830	718	1,548	4,919
1962	On Books	1,571	1,210	2,781	110	120	499	944	796	1,740	5,250
1,370,000	In Res.	1,441	1,120	2,561	107	120	499	944	796	1,740	5,027
1963	On Books	1,575	1,160	2,735	199	124	501	958	844	1,802	5,361
1,405,000	In Res.	1,441	1,062	2,503	196	124	501	958	844	1,802	5,126
1964	On Books	1,564	1,179	2,743	237	119	500	974	869	1,843	5,442
1,432,000	In Res.	1,409	1,100	2,509	231	116	500	974	869	1,843	5,199
1965	On Books	1,518	1,174	2,692	330	123	497	1,134	861	1,995	5,364
1,451,000	In Res.	1,345	1,087	2,432	322	118	497	1,134	861	1,995	5,137
1966	On Books	1,470	1,126	2,596	348	120	484	1,219	922	2,141	5,689
1,463,203	In Res.	1,243	1,029	2,272	342	117	484	1,219	922	2,141	5,356
1967	On Books	1,361	1,027	2,388	347	121	467	1,228	977	2,205	5,528
1,490,000	In Res.	1,141	960	2,101	341	119	467	1,228	977	2,205	5,233
1968	On Books	1,188	996	2,184	449	77	452	1,361	1,008	2,369	5,531
1,526,000	In Res.	996	882	1,878	441	77	452	1,361	1,008	2,369	4,856
1969	On Books	1,059	905	1,964	440	77	401	1,328	1,024	2,352	5,234
1,573,000	In Res.	916	818	1,734	431	75	401	1,328	1,024	2,352	4,667
1970	On Books	991	772	1,763	399	76	335	1,327	1,028	2,355	4,928
1,576,000	In Res.	846	693	1,539	393	73	335	1,327	1,028	2,355	4,354

TABLE 2  
TABULATED SUMMARY — HOSPITALS — MOVEMENT OF POPULATION

Hospitals	Patients in Hospital December 31, 1969			Admissions (Excluding Transfers*)			Discharges (Excluding Transfers*)			Deaths		Patients in Hospital December 31, 1970		
	M	F	T	M	F	T	M	F	T	F	M	M	F	T
<b>ACTIVE TREATMENT HOSPITALS:</b>														
Alberta Hospital, Ponoka	518	300	818	477	240	717	528	255	783	42	59	431	262	693
Alberta Hospital, Edmonton	572	344	916	1,592	962	2,554	1,610	950	2,560	43	59	528	318	846
TOTAL	1,090	644	1,734	2,069	1,202	3,271	2,138	1,205	3,343	85	118	959	580	1,539
<b>CONTINUED TREATMENT HOSPITALS:</b>														
Rosehaven, Camrose	214	187	401	5	—	5	3	5	8	44	68	175	160	335
Alberta Hospital, Claresholm	168	263	431	3	8	11	13	26	39	6	15	154	239	393
Alberta Hospital, Raymond	—	75	75	—	—	—	—	—	—	—	1	—	73	73
TOTAL	382	525	907	8	8	16	16	31	47	50	84	329	472	801
<b>HOSPITALS FOR THE MENTALLY RETARDED:</b>														
Alberta School Hospital, Red Deer	431	367	798	39	29	68	28	18	46	11	8	19	430	362
Deerhome, Red Deer	671	550	1,221	22	11	33	29	16	45	10	4	14	664	550
TOTAL	1,102	917	2,019	61	40	101	57	34	91	21	12	33	1,094	912
<b>UNIT FOR EMOTIONALLY DISTURBED CHILDREN:</b>														
Linden House, Red Deer	4	3	7	3	1	4	1	2	3	—	—	5	3	8
OVERALL TOTALS	2,578	2,089	4,667	2,141	1,251	3,392	2,212	1,272	3,484	156	235	2,387	1,967	4,354

\*Transfer means the movement of a certified patient from one provincial mental hospital to another.

TABLE 2a  
MODE OF ADMISSION OF PATIENTS

Method	Alberta Hospital, Edmonton			Alberta Hospital, Ponoka				
	First	%	Readmission %	First	%	Readmission %		
Voluntary	575	47.6	891	65	19.2	158	41.7	
Two Certificates	240	19.8	142	150	44.2	117	31.0	
One Emergency Certificate	217	17.9	157	78	23.0	67	17.7	
Warrant for Examination	36	3.0	66	4.9	3	0.9	3	0.8
Warrant under T.B. Act	4	0.3	—	—	—	—	—	—
From N.W.T.	19	1.6	8	0.6	—	—	—	—
Remand	95	7.9	53	3.9	25	7.4	12	3.2
Order of the Lieutenant-Governor	1	0.1	2	0.2	—	—	3	0.8
Transfer from Provincial Gaol for Examination	22	1.8	26	1.9	17	5.0	17	4.5
Transfer from Penitentiary	—	—	—	—	1	0.3	1	0.3
TOTAL	1,209	100.0%	1,345	100.0%	339	100.0%	378	100.0%

TABLE 3  
TABULATED SUMMARY OF DEATHS IN HOSPITALS  
(ICDA-8)

Disease	A.H., Ponoka			A.H., Edmonton			A.H., Clareholm			A.H., Raymond			Rosehaven, Canrose			A.S.H., Red Deer			Deerhorne Red Deer			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Musculoskeletal System	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Infective and Parasitic Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Neoplasms	2	1	3	6	1	7	2	2	4	—	—	—	2	1	3	—	—	—	—	—	—	12	5	17
Endocrine, Nutritional and Metabolic Diseases	—	—	—	1	1	2	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3
Diseases of the Nervous System and Sense Organs	—	—	—	3	—	3	—	—	—	—	—	—	—	—	—	4	2	6	—	—	—	7	2	9
Diseases of the Blood and Blood Forming Organs	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Mental Disorders	—	—	—	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	3
Diseases of the Circulatory System	12	9	21	16	10	26	4	4	8	—	—	—	20	7	27	—	—	—	2	—	—	2	54	30
Diseases of the Respiratory System	26	7	33	7	3	10	—	—	—	—	—	—	20	13	33	3	1	4	3	—	—	3	59	24
Diseases of the Digestive System	1	—	1	1	—	1	—	1	1	—	—	—	1	—	1	—	1	1	—	—	—	3	2	5
Diseases of the Genito-urinary System	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	1	2	3	1	4	5
Complications of Pregnancy, Childbirth and Puerperium	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Congenital Anomalies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	2	6	—	1	1	4	3	7
Symptoms and Ill-Defined Conditions	—	—	—	1	—	1	—	1	1	—	—	—	1	3	4	—	—	—	—	—	—	2	4	6
Accidents, Poisoning and Violence*	1	—	1	5	1	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	1	7
TOTALS	42	17	59	43	16	59	6	9	15	—	1	1	44	24	68	11	8	19	10	4	14	156	79	235

\*For detail see hospital report.

NOTE: Unit for Emotionally Disturbed Children, Linden House—No deaths.



TABLE 4  
TABULATED SUMMARY OF AGES OF DEATHS IN HOSPITALS

	A.H., Ponoka			A.H., Edmonton			A.H., Claresholm			A.H., Raymond			Rosehaven, Camrose			A.S.H., Red Deer			Deerhome, Red Deer			Totals			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
Under 1 year	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1 - 5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6 - 10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11 - 15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	5	12	—	—	—	—	7	5	12
16 - 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	2	5	—	—	—	—	3	2	5
20 - 29	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2	—	—	—	—	1	1	2
30 - 39	1	—	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
40 - 49	2	—	2	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	8
50 - 59	3	5	8	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	9	7	16	36
60 - 69	9	3	12	11	—	11	3	4	7	—	—	—	2	1	3	—	—	—	2	1	3	27	9	36	64
70 - 79	16	7	23	11	7	18	2	3	5	—	—	—	9	7	16	—	—	—	1	1	2	39	25	64	66
80 - 89	8	1	9	11	6	17	1	1	2	—	—	—	28	10	38	—	—	—	—	—	—	48	18	66	66
90 - 99	2	1	3	1	3	4	—	1	1	1	—	1	5	6	11	—	—	—	—	—	—	8	12	20	20
100 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	42	17	59	43	16	59	6	9	15	—	1	1	44	24	68	11	8	19	10	4	14	156	79	235	235

TABLE 5  
PROFESSIONAL STAFF, NEW AND RE-REGISTERED CASES, TREATMENT PERIODS, INTERVIEWS, PSYCHOLOGICAL EXAMINATIONS  
AND WORKLOAD BY CLINIC AREAS

Clinic Area	STAFF			NEW CASES			RE-REGISTERED CASES			DISTRIBUTION OF WORK					WORK-LOAD		
	Psychia- trists	Psycho- logists	Social Workers	M	F	T	M	F	T	Pat.	Col.	Gen.	P.E.				
Calgary and District	4	6/12	10	11/12	11	.5/12	575	340	915	556	314	870	12,663	6,576	23,135	2,876	45,250
Edmonton and District	5	6/12	12	11/12	16	1/12	939	510	1,449	707	321	1,028	5,899	9,077	29,798	3,315	48,089
Lethbridge, Medicine Hat, and District	1		3	4/12	4		340	217	557	261	154	415	2,152	3,341	300	733	6,526
Ponoka and District	.5/12		.5/12		—		5	7	12	11	57	68	67	17	—	20	104
Red Deer and District	1	2		1	4/12		298	330	628	77	96	173	2,503	1,714	310	457	4,984
TOTALS	12	.5/12	29	2.5/12	32	5.5/12	2,157	1,404	3,561	1,612	942	2,554	23,284	20,725	53,543	7,401	104,953

TOTAL NEW CASES SINCE 1929—61,508

Edmonton and District—Area East and West from Wetaskiwin North. Clinics held in Athabasca, Barrhead, Bonnyville, Camrose, Edson, Fort McMurray, Holden, Killam, Lac La Biche, Lamont, Peace River, Grande Prairie, Smoky Lake, St. Paul, Two Hills, Thorhild, Vegreville, Vermilion, Wainwright, Westlock, and Wetaskiwin.

Calgary and District—Area East and West from Didsbury to Claresholm. Clinics held in Drumheller, Three Hills, and Hanna.

Lethbridge and Medicine Hat Districts—Area East and West from Claresholm South. Clinics held in Brooks, Crowsnest Pass, Pincher Creek, and Vulcan.

Ponoka, Red Deer and Districts—East and West from Wetaskiwin to Didsbury. Clinics held in Castor, Stettler, Rimbey, Rocky Mountain House, Ponoka, and Red Deer.

New Cases—Patients examined for the first time by any Guidance Clinic in the Province.

Re-Registered Cases—Patient has been examined in Alberta Guidance Clinic prior to present year.

Pat.—Patient Interview, Diagnosis or Therapeutic.

Col.—Collateral Contact with Parents, Relatives or those closely interested or related to the patient.

Gen.—General Contact regarding Clinic activity, including those with other agencies and community services including talks, addresses, and teaching periods by staff members.

P.E.—Psychological Examinations and Tests.

TABLE 6  
AGE AND SEX CLASSIFICATION OF NEW CLINIC CASES

Age Group	Calgary and District			Edmonton and District			Lethbridge, Medicine Hat and District			Ponoka and District			Red Deer and District			Totals			Percentage of Totals		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
0 - 5	116	63	179	147	92	239	93	71	164	—	—	—	21	9	30	377	235	612	17.5	16.7	17.2
6 - 10	229	89	318	476	210	686	125	53	178	—	1	1	89	38	127	919	391	1,310	42.6	27.9	36.8
11 - 15	188	116	304	267	149	416	79	40	119	2	3	5	52	42	94	588	350	938	27.3	24.9	26.3
16 - 20	26	37	63	41	44	85	16	21	37	—	—	—	42	53	95	125	155	280	5.8	11.0	7.9
21 - 30	7	17	24	5	4	9	15	16	31	1	—	1	29	76	105	57	113	170	2.6	8.1	4.8
31 - 50	9	18	27	2	10	12	11	14	25	1	1	2	44	86	130	67	129	196	3.1	9.2	5.5
51 +	—	—	—	1	1	2	1	2	3	1	2	3	21	26	47	24	31	55	1.1	2.2	1.5
TOTALS	575	340	915	939	510	1,449	340	217	557	5	7	12	298	330	628	2,157	1,404	3,561	100.0	100.0	100.0

PERCENTAGE: M = % of Total New Male Cases; F = % of Total New Female Cases; T = % of Total New Cases.

TABLE 7  
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES—PRE-SCHOOL AGE GROUP  
(0 - 5 Years 11 Months)

DIAGNOSIS	Calgary and District			Edmonton and District			Lethbridge, Medicine Hat, and District			Ponoka and District			Red Deer and District			Totals			Percentage of Totals**		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Acute Brain Disorders	—	—	—	5	—	5	—	—	—	—	—	—	—	—	—	5	—	5	1.3	—	0.8
Chronic Brain Disorders	1	—	1	10	3	13	5	2	7	—	—	—	1	1	16	6	22	4.2	2.5	3.6	
Psychotic Disorders	—	—	—	—	1	1	1	—	1	—	—	—	—	—	—	1	1	2	0.3	0.4	0.3
Psycho Physiological Disorders	—	1	1	—	—	—	2	—	2	—	—	—	—	—	—	2	1	3	0.5	0.4	0.5
Psycho Neurotic Disorders	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2	0.3	0.4	0.3
Personality Disorders	—	—	—	6	3	9	—	—	—	—	—	—	4	—	4	10	3	13	2.7	1.3	2.1
Transient Situational Disorders	58	28	86	28	14	42	17	7	24	—	—	—	5	2	7	108	51	159	28.6	21.5	25.9
Mental Deficiency*	13	7	20	47	32	79	9	10	19	—	—	—	5	2	7	74	51	125	19.6	21.5	20.4
Diagnosis Deferred	—	—	—	10	4	14	4	—	4	—	—	—	—	—	—	14	4	18	3.7	1.7	2.9
Normal Child	43	26	69	40	37	77	55	50	105	—	—	—	6	4	10	144	117	261	38.2	49.4	42.5
Examination or Test Only	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1	0.3	—	0.2
Organic Disease	—	—	—	1	—	1	—	2	2	—	—	—	—	—	—	1	2	3	0.3	0.9	0.5
TOTALS	116	63	179	147	94	241	93	71	164	—	—	—	21	9	30	377	237	614	100.0	100.0	100.0

\*Mental Deficiency—Hereditary and Idiopathic but not as a secondary diagnosis.

\*\*Percentage—M = % of Total New Males; F = % of Total New Females; T = % of Total New Cases.



TABLE 8  
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES — SCHOOL AGE GROUP  
(6 Years to 15 Years 11 Months)

Diagnosis	Calgary and District			Edmonton and District			Lethbridge, Medicine Hat, and District			Ponoka and District			Red Deer and District			Totals			Percentage of Totals**			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
Acute Brain Disorders	—	—	—	—	1	1	1	—	1	1	—	—	—	—	—	—	2	2	—	—	0.3	0.1
Chronic Brain Disorders	1	—	1	8	4	12	17	3	20	—	—	—	1	—	1	27	7	34	1.8	0.9	1.5	
Psychotic Disorders	2	—	2	2	—	2	2	—	2	—	1	1	—	—	—	6	1	7	0.4	0.1	0.3	
Psycho Physiological Disorders	—	—	—	3	2	5	3	1	4	—	—	—	—	—	—	6	3	9	0.4	0.4	0.4	
Psycho Neurotic Disorders	23	11	34	8	8	16	9	13	22	—	—	—	1	4	5	41	36	77	2.7	4.9	3.4	
Personality Disorders	14	7	21	160	38	198	7	—	7	1	—	1	33	14	47	215	59	274	14.3	8.0	12.2	
Transient Situational Disorders	343	157	500	283	161	444	114	43	157	1	3	4	50	37	87	791	401	1,192	52.5	54.1	53.1	
Mental Deficiency*	21	15	36	127	78	205	30	29	59	—	—	—	32	14	46	210	136	346	14.0	18.4	15.4	
Diagnosis Deferred	—	—	—	46	16	62	6	1	7	—	—	—	—	—	—	52	17	69	3.4	2.3	3.1	
Normal Child	7	12	19	99	51	150	9	—	9	—	—	—	14	7	21	129	70	199	8.6	9.4	8.8	
Examination or Test Only	—	—	—	—	—	—	—	—	—	—	—	—	10	3	13	10	3	13	0.7	0.4	0.6	
Organic Disease	6	3	9	5	—	5	7	2	9	—	—	—	—	1	1	18	6	24	1.2	0.8	1.1	
TOTALS	417	205	622	741	359	1,100	204	93	297	2	4	6	141	80	221	1,505	741	2,246	100.0	100.0	100.0	

\*Mental Deficiency—Hereditary and Idiopathic but not as a secondary diagnosis.

\*\*Percentage—M=% of Total New Males; F=% of Total New Females; T=% of Total New Cases.

TABLE 9  
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES — ADULT GROUP  
(16 Years and Over)

Diagnosis	Calgary and District				Edmonton and District				Lethbridge, Medicine Hat, and District				Ponoka and District				Red Deer and District				Totals				Percentage of Totals**					
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		T	
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Acute Brain Disorders	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	0.4	—	—	0.1	
Chronic Brain Disorders	—	—	—	1	—	1	—	1	1	1	—	—	—	—	—	1	—	—	1	—	—	2	1	3	0.7	0.2	0.4			
Psychotic Disorders	2	—	2	5	4	9	1	1	2	—	—	—	—	—	—	11	22	33	19	27	46	6.9	6.3	6.6						
Psycho Physiological Disorders	—	—	—	—	—	—	1	1	2	—	—	—	—	—	—	1	—	—	1	2	1	2	1	3	0.7	0.2	0.4			
Psycho Neurotic Disorders	6	29	35	3	4	7	5	13	18	—	2	2	42	122	164	56	170	226	20.4	40.0	32.2									
Personality Disorders	13	10	23	10	8	18	2	4	6	—	—	—	41	45	86	66	67	133	24.0	15.7	19.0									
Transient Situational Disorders	17	26	43	13	22	35	20	25	45	1	1	2	15	11	26	66	85	151	24.0	20.0	21.6									
Mental Deficiency*	3	4	7	8	5	13	3	1	4	—	—	—	4	8	12	18	36	6.5	4.2	5.1										
Diagnosis Deferred	—	—	—	7	7	14	2	1	3	2	—	2	—	—	—	11	8	19	4.0	1.9	2.7									
Normal	—	2	2	2	7	9	4	1	5	—	—	—	—	—	—	6	10	16	2.2	2.3	2.3									
Examination or Test Only	—	—	—	—	—	—	4	5	9	—	—	—	16	29	45	20	34	54	7.3	8.0	7.7									
Organic Disease	1	1	2	1	—	1	1	—	1	—	—	—	5	4	9	8	5	13	2.9	1.2	1.9									
	100.0																				100.0	100.0	100.0							
Table 3C	42	72	114	51	57	108	43	53	96	3	3	6	136	241	377	275	426	701	12.7	30.3	19.7									
Table 3B	417	205	622	741	359	1,100	204	93	297	2	4	6	141	80	221	1,505	741	2,246	69.8	52.8	63.1									
Table 3A	116	63	179	147	94	241	93	71	164	—	—	—	21	9	30	377	237	614	17.5	16.9	17.2									
GRAND TOTALS	575	340	915	939	510	1,449	340	217	557	5	7	12	298	330	628	2,157	1,404	3,561	100.0	100.0	100.0									

\*Mental Deficiency—Hereditary and Idiopathic but not as a secondary diagnosis.

\*\*Percentage—M= % of Total New Males; F= % of Total New Females; T= % of Total New Cases.

TABLE 10  
SOURCES REFERRING NEW CASES TO CLINICS

Referral Source	Calgary and District			Edmonton and District			Lethbridge, Medicine Hat, and District			Ponoka and District			Red Deer and District			Totals			Percentage of Totals*		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Schools and School Authorities	142	71	213	432	159	591	121	84	205	1	1	2	80	29	109	776	344	1,120	36.0	24.5	31.5
Private Doctors and Medical Clinics	82	47	129	152	99	251	46	17	63	1	3	4	104	195	299	385	361	746	17.9	25.7	20.9
Medical Clinics, Rehabilitation, Cerebral Palsy, T.B., O.P.D.	40	25	65	—	1	1	—	—	—	—	—	—	2	7	9	42	33	75	2.0	2.4	2.1
Health Units, Public Health Nurses, M.O.H.	52	48	100	35	24	59	42	23	65	—	—	—	12	4	16	141	99	240	6.5	7.1	6.7
Child Welfare—Provincial and Municipal	119	66	185	32	20	52	26	17	43	—	—	—	20	18	38	197	121	318	9.1	8.6	8.9
Juvenile and Family Court, Gaols, Bowden Institute	14	5	19	11	2	13	27	8	35	—	—	—	15	6	21	67	21	88	3.1	1.5	2.5
Parents, Relatives, Friends, Self	126	77	203	239	166	405	71	63	134	2	2	4	52	68	120	490	376	866	22.7	26.8	24.3
Dept. of Health (Prov.)	—	1	1	26	18	44	—	—	—	—	1	1	—	—	—	26	20	46	1.2	1.4	1.3
Other	—	—	—	12	21	33	7	5	12	1	—	1	13	3	16	33	29	62	1.5	2.0	1.8
TOTALS	575	340	915	939	510	1,449	340	217	557	5	7	12	298	330	628	2,157	1,404	3,561	100.0	100.0	100.0

\*Percentage—M=% of Total New Male Cases

F=% of Total New Female Cases

T=% of Total New Cases



TABLE 11  
MAJOR RECOMMENDATIONS MADE IN REGARD TO NEW CLINIC CASES

Recommendation	Calgary and District			Edmonton and District			Lethbridge, Medicine Hat, and District			Ponoka and District			Red Deer and District			Totals			Percentage of Totals		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Admission to: (a) Mental Hospital	—	—	—	2	4	6	1	—	1	—	—	—	2	3	5	5	7	12	0.2	0.5	0.3
(b) Alberta School Hospital and Deerhome	10	3	13	16	12	28	4	3	7	—	—	—	4	1	5	34	19	53	1.6	1.4	1.5
Placement in Protective or Correctional Home or Institution	26	12	38	10	7	17	3	—	3	—	—	—	—	—	—	39	19	58	1.8	1.4	1.6
Placement in Foster Home	18	21	39	6	5	11	3	2	5	—	—	—	4	—	4	31	28	59	1.4	2.0	1.7
Educational Advice, Modified Program, Spec. Class, Vocational	10	10	20	239	111	350	84	63	147	—	—	—	80	24	104	413	208	621	19.1	14.8	17.4
Educational Advice, Other	14	4	18	102	39	141	38	36	74	1	—	1	3	—	3	158	79	237	7.3	5.6	6.7
Modified Home Management	125	58	183	143	76	219	66	25	91	1	—	1	44	39	83	379	198	577	17.6	14.1	16.2
Referred for Medical Treatment	9	8	17	33	21	54	43	28	71	1	1	2	21	57	78	107	115	222	5.0	8.2	6.2
Treatment in Clinic	266	164	430	219	136	355	33	28	61	1	6	7	97	148	245	616	482	1,098	28.6	34.3	30.9
Other	97	60	157	169	99	268	65	32	97	1	—	1	43	58	101	375	249	624	17.4	17.7	17.5
TOTALS	575	340	915	939	510	1,449	340	217	557	5	7	12	298	330	628	2,157	1,404	3,561	100.0	100.0	100.0

TABLE 12  
SUMMARY OF NUMBER OF MENTAL DEFECTIVES EXAMINED BY YEARS

Year	Severe I.Q. Below 50				Moderate I.Q. 50 - 70				Mild I.Q. 70 - 85				Unspecified				Totals				Percent of New Cases	Cumulative Totals				
	M		F		M		F		M		F		M		F		M		F				T			
	M	T	M	F	M	T	M	F	M	T	M	F	M	T	M	F	M	T	M	F			T			
Number of Mental Defectives Examined to 1965																										
1966	80	56	136	144	101	245	327	170	497	53	31	84	604	358	962	24.2	9,890									
1967	78	64	142	150	109	259	327	175	502	146	115	261	701	463	1,164	28.2	10,852									
1968	52	33	85	102	90	192	291	177	468	88	63	151	533	363	896	21.3	12,016									
1969	69	52	121	66	72	138	202	127	329	31	20	51	368	271	639	17.6	13,551									
Year	Profound I.Q. below 20				Severe I.Q. 20 - 35				Moderate I.Q. 36 - 51				Mild I.Q. 52 - 67				Borderline I.Q. 68 - 85				Unspecified				Percent of New Cases	Cumulative Totals
	M		F		M		F		M		F		M		F		M		F		T					
	M	T	M	F	M	T	M	F	M	T	M	F	M	T	M	F	M	T	M	F	T					
1970	6	7	13	24	13	37	27	29	56	38	92	276	149	425	22	19	41	409	255	664	18.6	14,215				

I.Q.—Intelligence Quotient

M—Male, F—Female, T—Total

Includes cases of Mental Deficiency secondary to primary diagnosis

# ALBERTA GUIDANCE CLINIC, CALGARY

N. C. Horne, M.B., M.R.C.S., D.P.M., Director

The professional staff at the year's end numbered 26 full-time and three half-time. Of these 17 full-time and the three half-time members had a continuous service of over 12 months. The professional staff situation was the best it has been for a number of years, both in number and quality of training; but medical staff, at the Medical Specialist level, was still difficult to obtain. Two trainees of the Psychiatric Specialist Training Program were on staff. A "teaching position" at the Psychologist IV level, on a joint appointment basis with the Department of Psychology, University of Calgary, was authorized in September, but, at year's end, an applicant was not available who was suitable to both the University and the Clinic.

By arrangement with the University of Calgary, the following students received training in the Clinic:

Two post-graduate students (completion of the first year of the Master's program in Psychology) carried out clinical research projects during the summer under the supervision of the senior psychologist.

Sixteen post-graduate students from the Department of Psychology attended the Clinic on a practicum psychological assessment basis. Seven post-graduate students from the same department carried on two projects on a behaviour modification approach to two cases, while two other post-graduate students carried on a similar project to one case.

Twenty-one post-graduate students from the Department of Educational Psychology attended a one-half day seminar in the Clinic.

Six first-year students from the School of Social Welfare attended the Clinic two days a week from January to April as the field placement requirement for their curriculum program. Four first-year students attended the Clinic on a similar placement from September to December.

By arrangement with the Department of Psychology, University of Saskatchewan, one post-graduate student received clinical training with course accreditation during the four summer months.

By arrangement with the Schools of Nursing, Foothills Hospital, Calgary, Calgary General Hospital and Mount Royal Junior College, Calgary, a total of 173 student nurses and two instructors attended the Clinic over the year for observation of intake procedures including case conferences.

Many requests were received from agencies and training institutions for assistance in training and curriculum programs. It was not possible to meet all the requests. To accommodate as many as possible, a seminar approach was taken in some instances using the video equipment as a teaching aid. This proved most effective. Many staff members gave their time unstintingly over and above the normal working day to make this part of the Clinic program a meaningful experience for those who participated.

Another type of involvement was with the Calgary and Region Mental Health Planning Council, its Sub-Committees and Task Forces. For the senior members of the staff particularly, it required many hours of time which was not a part of the normal working day.

The Psychiatric and Educational Day Hospital Treatment Centre which is supported in its operation by the Calgary Public School Board and the Alberta Children's Hospital, continued with its five day a week program. Eighteen youngsters attended the Centre over the year. The staff operating the Centre remained the same: two special teachers supplied by the Calgary Public School Board; one recreational therapy assistant and two psychiatric social workers from the Clinic establishment. Again the willing participation of the Calgary Public School Board must be acknowledged; and also the many volunteers who have assisted in the Centre's program and without whose assistance and participation the success of the Centre could not have been achieved.

The special unit for severely emotionally disturbed children established in the Alberta Children's Hospital, Calgary, entered into its second year of operation. Five children were treated during the year.

In response to the number of requests received following the first one-day seminar on "How a Psychologist Works and Functions in a Guidance Clinic", four repeated one-day seminars were held during January, February and March. The seminars were attended by over 250 professional workers and students from various agencies and institutions in Calgary and surrounding districts.

Two psychologists at the Master's level (Clinic personnel) carried out a research and service project with Indian children and their families from the Indian Reservations at Gleichen and Cluny.

One psychologist at the Master's level (Clinic personnel) began a research project about retarded pre-schoolers.

## SUMMARY OF NEW AND RE-REGISTERED CASES AND WORKLOAD

Clinic Centre	New Cases	Re-Registered	Increase (Decrease)	Workload
Calgary .....	851	788	+ 69	44,079
Drumheller .....	51	60	+ 40	805
(Three Hills)				
(Strathmore)				
Hanna .....	13	22	-- 8	366
TOTAL .....	915	870	+101	45,250

The total number of new cases was up 110, and the number of the re-registered cases down nine, making a net increase of 101 to the 1969 figures. The workload increased by 3,820 work units. The professional staff on strength at the end of the year was the same as that at the end of 1969, but the interchange of staff over the year numbered 16 compared to 33 in the previous year. The stability of the staff was a major factor in the increased workload.

## AGE AND SEX DISTRIBUTION OF NEW CASES

Age Distribution	Male	Female	Total	Percentage
0 - 5/11 .....	116	63	179	19.56
6 - 10/11 .....	229	89	318	34.76
11 - 15/11 .....	188	116	304	33.22
16 - 20/11 .....	26	37	63	6.86
21 - 30/11 .....	7	17	24	2.62
31 - 50/11 .....	9	18	27	2.95
51 and over .....	--	--	--	--
TOTAL .....	575	340	915	100.00

The ratio of male to female cases 1.69:1.



There were 131 mental defectives examined of whom 13 were recommended for admission to the appropriate facility.

## ANALYSIS OF TIME SPENT IN THERAPY HOURS

	Psychiatrists	Psychologists	Social Workers	Total
Individual Therapy .....	757	2,293	1,551	4,601
Family Therapy .....	170	172	226	568
Group Therapy .....	16	592	3,672	4,280
Possible Treatment Cases .....	94	1,183	1,423	2,700
Extended Counselling .....	242	422	522	1,186
<b>TOTAL .....</b>	<b>1,279</b>	<b>4,662</b>	<b>7,394</b>	<b>13,335</b>

There was an increase of 2,070 hours over the 1969 figures in this part of the Clinic program.

The majority of cases now seen in the Clinic require some type of intensive therapy. As it is not possible to accommodate the number of clients requiring this type of treatment, a stop gap measure is used called "Possible Treatment".

New clients were placed on the "Possible Treatment" list until such time as they could be worked into the intensive therapy program. "Possible Treatment" cases were seen as often as time permitted, on an average of two to three times a month.

Over 1,250 cases were involved in the therapy program, or about 70% of the total cases registered in the Clinic during the year.

**Public and Educational Activities**

Public Education	37 public addresses and panels
Special Education and Agency	46 addresses, seminars and panels

**ALBERTA GUIDANCE CLINIC, EDMONTON**

**W. Bobey, B.Sc., M.D., C.R.C.P.(C), Director**

The Edmonton Guidance Clinic operated with the same number of staff positions as in 1969. There were four psychiatrist, two psychiatric resident, 11 psychologist and 12 psychiatric social worker positions. The Grande Prairie sub-office had five positions — one psychiatrist, two psychologists and two psychiatric social workers. In March a well-qualified social worker was appointed Clinic Director to cover the psychiatrist position since a psychiatrist could not be obtained.

All Edmonton positions were filled, other than for brief periods resulting from staff turn-over. A psychologist and psychiatric social worker were recruited to the Grande Prairie sub-office in September; staffing was not up to strength during the whole year and there was a further decrease of cases seen. Also schools continued to rely on the Grande Prairie Clinic for psychological testing service which was not provided by the school systems in this area. There was a considerable demand for this type of service and it did impinge on the regular Clinic services. An appreciable waiting list developed by the end of the year.

In Edmonton and Grande Prairie of the nine standard recommendations used for statistical purposes, 33.9% of the new cases involved "educational advice", "Treatment in the Clinic" — 24.5%, and "other" (miscellaneous) at 18.5% were the next ranking recommendations. The high percentage of recommendations involving educational "problems" closely followed

the trend over the past ten years. This has always accounted for 25 to 35% of the Clinic's recommendations.

Insofar as travelling clinics were concerned 87 trips, utilizing 176 work days, were made.

Using the period 1965 to 1969 (five years) for comparison, the figures for Clinic activities were:

	1970	Average (1965-69)	Increase Decrease
Edmonton and Rural .....	1,419	1,379	+ 40
Travelling Clinics .....	617	665	- 48
Grande Prairie-Peace River .....	441	549	-108
<b>TOTAL .....</b>	<b>2,477</b>	<b>2,593</b>	<b>-116</b>

Tabular summary of new and re-registered cases, indicating increase or decrease from the previous year, and total workload for each community follows:

Clinic Centre	New Cases	Re-Registered	Increase Decrease	Workload
Athabasca .....	37	2	+ 7	402
Barrhead, Thorhild, Westlock .....	29	9	+ 5	514.5
Bonnyville .....	38	4	- 44	222
Camrose .....	66	22	+ 29	629
Cold Lake .....	7	—	+ 7	208.5
Drayton Valley .....	6	—	+ 6	105
Edmonton .....	525	765	+302	39,006
Edmonton Rural .....	118	11	- 41	1,035
Edson .....	55	16	- 15	551.5
Ft. Chipewyan .....	23	5	+ 28	187
Ft. McMurray .....	44	6	+ 28	498.5
Grand Cache .....	3	—	+ 9	104.5
Hinton-Jasper .....	6	—	+ 3	107.5
Holden .....	6	—	+ 2	25.5
Lac La Biche .....	11	3	+ 4	110.5
Lamont .....	5	—	+ 4	89
Northwest Territories .....	31	5	- 20	151.5
Peace River-Grande Prairie .....	295	146	- 96	2,167
Sangudoo .....	9	—	+ 9	156
Sedgewick .....	6	—	+ 6	97
Smoky Lake .....	7	—	+ 7	25.5
St. Paul .....	18	6	- 5	183.5
Two Hills .....	8	3	+ 2	77.5
Vegreville .....	29	6	+ 18	554.5
Vermilion .....	24	3	+ 4	216
Viking .....	—	—	—	3
Wainwright .....	8	—	- 5	29
Wetaskiwin .....	32	16	+ 1	632.5
<b>TOTAL .....</b>	<b>1,449</b>	<b>1,028</b>	<b>+255</b>	<b>48,089</b>

(Increase of 15,088 over 1969)

Table of age and sex distribution of new cases showing the percentage of new cases.

	Age	Male	Female	Total	Percentage
Pre-School .....	0- 5/11	147	92	239	16.49%
School Age .....	6-15/11	743	359	1,102	76.04%
Over .....	16	49	59	108	7.47%
<b>TOTAL .....</b>		<b>939</b>	<b>510</b>	<b>1,449</b>	<b>100.00%</b>

Ratio of male to female cases was  $939:510 = 1.84:1$ .

A team of workers continued to refine and expand group therapy with older children and adolescents. Video taping advanced beyond the initial experimental stage to incorporate its use in therapy and teaching.

The Day Centre program for the assessment and treatment of pre-school children increased its involvement and cooperation with other services in Edmonton dealing with problems of pre-school children.

The clinic's flexibility and adaptability allowed it to work increasingly with other preventive mental health services in the community and with educational facilities in the Northern half of Alberta. In the area of training of professional personnel, the clinic was recognized to an increasing degree as a resource for

field training of social work assistants from N.A.I.T., post-graduate psychologists of the Department of Educational Psychology of the University of Alberta and in the training of psychiatric residents from the University of Alberta, in the area of child psychiatry.

The clinic continued an important consultative service to the MacKenzie area of the Northwest Territories, by means of travelling clinics to Yellowknife, Fort Smith and Hay River, N.W.T. Some individuals were seen in Edmonton. The Charles Camsell Hospital was used for the assessment of cases referred from the N.W.T. to the Guidance Clinic in Edmonton.

### ALBERTA GUIDANCE CLINIC, LETHBRIDGE

**R. Gibson, M.D., Ch.B., D.P.M., Director**

At the beginning of January, 1970, the professional staff at the Lethbridge Clinic consisted of one full-time psychiatrist, three full-time social workers and two full-time psychologists. At the Medicine Hat Clinic there was one full-time social worker and one full-time psychologist.

At the end of 1970 the professional staff was unchanged with the exception of an additional full-time psychologist who was appointed to the Lethbridge Clinic on September 1.

Clinics were held at all of the centres shown on the table below during the year. Clinics held outside of Lethbridge and Medicine Hat were primarily for diagnostic purposes and people requiring therapy usually came to the two larger centres for it.

The Lethbridge and Medicine Hat Clinics offer, besides diagnostic services, vocational testing, group therapy, psychotherapy, as well as individual, marital and family counselling services.

During the year staff members gave talks to professional and lay groups in the district, following invitation to do so.

Good working relations exist with all referring agencies and these included other government and local social agencies, schools, medical officers of health, and private practitioners.

SUMMARY OF NEW AND RE-REGISTERED CASES AND WORKLOAD

Clinic Centre	New Cases	Re-Registered Cases	Increase or Decrease New Cases	Workload
Brooks .....	28	17	+ 11	182
Crowsnest Pass.....	14	8	- 3	144
Lethbridge .....	367	242	- 25	4,545
Medicine Hat.....	127	133	+ 27	1,438
Pincher Creek .....	14	6	- 5	101
Vulcan .....	7	9	- 2	116
TOTALS .....	557	415	+ 3	6,526

AGE AND SEX DISTRIBUTION OF NEW CASES

Age	Male	Female	Total	Percentage
0 - 5/11 .....	93	71	164	29.44
6 - 15/11 .....	204	83	297	53.32
16 and over .....	43	53	96	17.24
TOTALS .....	340	217	557	100.00

The ratio of total male to female cases was 340 to 217 or 1.6 to 1.

### ALBERTA GUIDANCE CLINIC, PONOKA

**J. M. Byers, M.Sc., M.D., Spec. Psych. Med. (Alta.)  
Cert. M.H.A., Medical Superintendent and Director**

The work of the Guidance Clinic decreased markedly in 1970 as compared with previous years. This was due to the fact that there was less demand for this type of service. Previously, quite a number of referrals were made by the local schools, but as a result of the appointment of school counsellors the problems were presumably resolved by them and not referred to this Clinic.

SUMMARY OF WORKLOAD

New Cases 12	Re-Registered Cases 68	Decrease 17	Workload 104	
TABLE OF NEW CASES—AGE AND SEX DISTRIBUTION				
Age	Male	Female	Total	Percentage
0 - 5/11 .....	2	4	6	50
6 - 15/11 .....	3	3	6	50
16 and over .....	5	7	12	100
Ratio of Male = 5 = .71:1				
	Female	7		

### ALBERTA GUIDANCE CLINIC, RED DEER

**J. B. Haigh, M.B., Ch.B., D.P.M.,  
Spec. Psych., C.R.C.P.(C), Director**

The work of the Alberta Guidance Clinic, Red Deer, maintained the impetus during 1970, established in the previous two years and could be regarded as operating at capacity for the Clinic with its staff structure consisting of: one Psychiatrist, two Psychologists, two Social Workers, one Clinic Secretary, and one Clerk-Typist.

In addition to a full-time Clinic in Red Deer, out-of-town clinics were held in Stettler, Rocky Mountain House, Didsbury and Hobbema. A total of 628 new patients was seen, and 173 patients were re-registered. In the Red Deer General Hospital 145 patients were seen, 104 electro-convulsant therapy treatments were administered and modified insulin was received by 26 patients. Interview-hours carried out by Clinic personnel in the Guidance Clinic totalled 4,984.

The City and County school systems had excellent guidance departments, so that routine testing of children was rarely done in the Red Deer Guidance Clinic. This was not true of the out-of-town clinics, where the clinic was expected to fulfil this role. In the City the schools tended to refer the more difficult cases, the emotionally disturbed and those where independent opinion was needed. The Clinic maintained a good liaison with other social agencies and institutions in the area, and there was continual demand for assessment of individuals and families.

The Clinic continued to act as a comprehensive mental health centre, to which children and adults were referred by family doctors and other specialists in the City and surrounding area. Red Deer was still without private psychiatric facilities. Forty-five per cent (45%) of the clients were 21 years of age or over.

# ACTIVE TREATMENT HOSPITALS

## ALBERTA HOSPITALS — EDMONTON and PONOKA

It is interesting to note that admissions increased at the Alberta Hospital, Edmonton, by 348 over 1969. The City of Edmonton contributed 65.2% of the total admissions. On the other hand admissions decreased at the Alberta Hospital, Ponoka, by 256 over 1969 and the City of Calgary contributed 29.8% of the total admissions. The geographic origins of admissions of patients admitted to each hospital are shown in tables 21, 22, 34 and 35.

TABLE 13

### TOTAL FIRST ADMISSIONS BY PSYCHIATRIC DIAGNOSIS ALBERTA HOSPITAL, EDMONTON ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	48	40	88	5.7
291	Alcoholic Psychosis .....	33	3	36	2.3
292	Psychosis Associated with Intracranial Infection .....	1	—	1	.1
293	Psychosis Associated with Other Cerebral Condition .....	49	12	61	3.9
294	Psychosis Associated with Other Physical Conditions .....	21	11	32	2.1
295	Schizophrenia .....	146	122	268	17.3
296	Affective Psychoses .....	39	49	88	5.7
297	Paranoid States .....	15	5	20	1.3
298	Other Psychoses .....	3	3	6	.4
299	Unspecified Psychoses .....	3	1	4	.3
300	Neuroses .....	117	111	228	14.7
301	Personality Disorders .....	149	65	214	13.8
302	Sexual Deviation .....	16	1	17	1.1
303	Alcoholism .....	195	28	223	14.4
304	Drug Dependence .....	37	16	53	3.4
305	Physical Disorders of Presumably Psychogenic Origin .....	—	1	1	.1
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	40	36	76	4.9
308	Behaviour Disorders of Childhood .....	16	7	23	1.5
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	13	7	20	1.3
310-					
315	Mental Retardation .....	24	23	47	3.0
345	Epilepsy .....	11	3	14	.9
793	Observation Without Need for Further Medical Care .....	22	6	28	1.8
	TOTALS .....	998	550	1,548	100.0

Table 2a shows the Mode of Admission of patients to active treatment hospitals. It is interesting to note that a greater percentage of readmissions came voluntarily than did first admissions.

Tables 13 to 16 show consolidated information relating to: Diagnosis on First Admission, Diagnosis of Re-admissions, Age and Sex on Admissions, and the Diagnoses of Patients on Books, following which are the detailed reports of the active treatment hospitals with tables and maps showing the source of admission by geographic area.

TABLE 14

### TOTAL READMISSIONS BY PSYCHIATRIC DIAGNOSIS ALBERTA HOSPITAL, EDMONTON ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	23	6	29	1.7
291	Alcoholic Psychosis .....	29	9	38	2.2
292	Psychosis Associated with Intracranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	15	9	24	1.4
294	Psychosis Associated with Other Physical Conditions .....	2	4	6	.3
295	Schizophrenia .....	368	305	673	39.1
296	Affective Psychoses .....	49	70	119	6.9
297	Paranoid States .....	9	6	15	.9
298	Other Psychoses .....	2	3	5	.3
299	Unspecified Psychoses .....	1	1	2	.1
300	Neuroses .....	88	95	183	10.6
301	Personality Disorders .....	124	46	170	9.9
302	Sexual Deviation .....	12	—	12	.7
303	Alcoholism .....	237	50	287	16.6
304	Drug Dependence .....	22	6	28	1.6
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	2	—	2	.1
307	Transient Situational Disturbances .....	15	12	27	1.6
308	Behaviour Disorders of Childhood .....	2	1	3	.2
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	7	3	10	.6
310-					
315	Mental Retardation .....	37	16	53	3.1
345	Epilepsy .....	19	10	29	1.7
793	Observation Without Need for Further Medical Care .....	8	—	8	.4
	TOTALS .....	1,071	652	1,723	100.0

TABLE 15

### AGES ON ADMISSION AND READMISSION ALBERTA HOSPITAL, EDMONTON ALBERTA HOSPITAL, PONOKA

Ages	First Admissions			Readmissions			Total			%
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
Under 15 years .....	15	21	36	3	2	5	18	23	41	1.3
15 - 19 years .....	141	91	232	58	32	90	199	123	322	9.8
20 - 24 years .....	165	89	254	142	58	200	307	147	454	13.9
25 - 29 years .....	138	62	200	133	64	197	271	126	397	12.1
30 - 34 years .....	90	51	141	128	75	203	218	126	344	10.5
35 - 39 years .....	74	48	122	120	84	204	194	132	326	10.0
40 - 44 years .....	82	41	123	160	70	230	242	111	353	10.8
45 - 49 years .....	65	33	98	116	89	205	181	122	303	9.3
50 - 54 years .....	50	25	75	71	61	132	121	86	207	6.3
55 - 59 years .....	41	14	55	38	44	82	79	58	137	4.2
60 - 64 years .....	36	15	51	42	28	70	78	43	121	3.7
65 - 69 years .....	30	16	46	24	28	52	54	44	98	3.0
70 and over .....	71	44	115	36	17	53	107	61	168	5.1
TOTALS .....	998	550	1,548	1,071	652	1,723	2,069	1,202	3,271	100.0



TABLE 16  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS  
DECEMBER 31, 1970  
ALBERTA HOSPITAL, EDMONTON  
ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	51	96	147	8.3
291	Alcoholic Psychosis .....	37	3	40	2.3
292	Psychosis Associated with Intracranial Infection .....	15	7	22	1.2
293	Psychosis Associated with Other Cerebral Condition .....	107	77	184	10.4
294	Psychosis Associated with Other Physical Conditions .....	5	4	9	0.5
295	Schizophrenia .....	520	283	803	45.6
296	Affective Psychoses .....	43	52	95	5.4
297	Paranoid States .....	29	16	45	2.6
298	Other Psychoses .....	7	1	8	0.5
299	Unspecified Psychoses .....	9	3	12	0.7
300	Neuroses .....	33	41	74	4.2
301	Personality Disorders .....	42	22	64	3.6
302	Sexual Deviation .....	6	—	6	0.3
303	Alcoholism .....	58	11	69	3.9
304	Drug Dependence .....	7	3	10	0.6
305	Physical Disorders of Presumably Psychogenic Origin .....	—	1	1	0.1
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	14	15	29	1.6
308	Behaviour Disorders of Childhood .....	4	2	6	0.3
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	19	18	37	2.1
310-	Mental Retardation .....	47	34	81	4.6
345	Epilepsy .....	9	7	16	0.9
793	Observation Without Need for Further Medical Care .....	4	1	5	0.3
TOTALS .....		1,066	697	1,763	100.0

#### ALBERTA HOSPITAL, PONOKA

J. M. Byers, M.Sc., M.D., Spec. Psych. Med. (Alta.)  
Cert. M.H.A. (A.P.A.), Medical Superintendent

R. M. Shellenberg, B.S.P., D.H.A., Executive Director

#### MOVEMENT OF POPULATION

On December 31, 1970, there were 772 patients on the books, 478 males and 294 females. There were 431 male and 262 female patients, a total of 693, in residence. There were 79 on leave of absence or unauthorized leave.

On December 31, 1969, there were 905 patients, 576 males and 329 females on the books. The patient population in residence was 818, 518 males and 300 females. There were 87 on leave of absence or unauthorized leave.

#### ADMISSION OF PATIENTS

During the year 477 men and 240 women were admitted including transfers, for a total of 717, a decrease of 257 over the preceding year.

Of those admitted, 236 men and 103 women were first admissions, and 241 men and 137 women were re-admissions.

Two hundred and twenty-three admissions were by voluntary application; 267 by two Medical Certificates; 145 were by one Medical Certificate; six by Warrant for examination; 37 were on remand for observation; 34 were admitted on transfer from Gaols for observation; two were admitted from Penitentiaries for treatment; and three Detention under Section 527, C.C.C.

Of the 412 patients admitted by Medical Certificate, 169 or 41.01 per cent subsequently signed voluntary forms, and 21 patients admitted voluntarily had to be certified (8.8 per cent).

#### SEPARATION OF PATIENTS

Eight hundred and fifty patients were discharged, 575 men and 275 women. This was a decrease of 111 over the previous year. Of the discharges, 615 were discharged direct, 145 were discharged from leave, and 23 were discharged from unauthorized leave. In addition, five men and three women were transferred to other hospitals within the Division.

There were 59 deaths, including one suicide.

#### GENERAL HEALTH OF PATIENTS

A total of 1,073 accidents were reported of which 1,058 were considered minor. Fifteen patients sustained fractures, three of which were of the femur. Those patients who sustained femoral fractures were transferred to the Red Deer General Hospital for surgical treatment.

There were 119 unauthorized leaves, 75 involving male patients and 44 involving female patients. Most of the patients who left the hospital without permission had walking out privileges but some forced their way out from various wards.

There were no epidemics.

A total of 3,013 X-Ray examinations were done. More than half of this number was accounted for by chest X-Rays done on patients and staff.

One thousand five hundred and eighty-four inoculations were given to patients. These included Typhoid, Paratyphoid, Diphtheria Toxoid and Influenza vaccine.

Tuberculin tests were given to 730 patients.

A total of 1,542 injections were given to staff members. These included Smallpox vaccinations, T.A.-B.T. inoculations and Diphtheria Toxoid injections.

All food handlers in the Dietary Department had routine stool cultures on commencement of duty and at six-month intervals.

#### CLINICAL WORK

Group psychotherapy and psychotropic drugs were used extensively in 1970. In addition, individual psychotherapy, behavioural therapy and electroconvulsive treatment were given. In many instances, members of the patients' families were involved in therapy sessions.

Seventy-seven patients, 63 men and 14 women received treatment in the program of treatment for alcoholics. This represented a decrease of 11 as compared with 1969.

The services of specialists, such as neurologists, surgeons, ophthalmologists and internists were used to aid in diagnosis and to carry out special procedures.

Members of the medical staff provided forensic services to the courts by examining 37 patients who were sent to the hospital on remand for observation. In addition, 39 persons from Correctional Institutes were admitted for examination and treatment.

The Dental Department performed 4,639 dental procedures which included examinations, fillings, extractions and dentures.

The Pharmacy operated efficiently throughout the year. The prescribing of drugs was done, using generic names and metric weights.

Two thousand four hundred and twenty-one prescriptions were filled for out-patients, and 664 for discharged patients.

Seventy-two surgical operations were performed at this hospital, 60 being minor and 12 major.

### OUT-PATIENT SERVICES

All members of the medical staff held out-patient consultations but not on a fixed schedule. It was estimated that members of the medical staff saw 303 patients, on an out-patient basis.

The Out-Patient Department at the Foothills Hospital, Calgary, was staffed by two part-time Certified Psychiatrists, on a sessional basis, three full-time Social Workers and a Secretary.

### OUT-OF-HOSPITAL SERVICES

A total of 112 appointments were made with specialists outside the hospital. Twenty-nine of these appointments were made at the Cancer Clinic and 48 patients were admitted to General Hospitals for treatment.

### SPECIAL PATHOLOGICAL SERVICES

Eight biopsies were done and the specimens were sent to the Provincial Laboratory for examination. No autopsies were performed here, but two bodies were sent to the Red Deer General Hospital for autopsy.

The Laboratory carried out 10,433 tests of which 101 were electrocardiograms. One thousand and seventy-six specimens were sent to other laboratories for examination.

There were 111 electroencephalograms performed which were interpreted by a neurologist at the University of Alberta Hospital.

### NURSING SERVICES

The standard of nursing care remained high. The nursing staff showed a keen interest in the patients, and endeavoured to keep abreast of the times in nursing techniques. They demonstrated enthusiasm and interest in participating in In-Service Educational Programs and endeavouring to utilize new skills.

Since September, all nursing positions have been filled. New appointments were made to senior positions in the nursing administrative staff. Mrs. Muriel Thumlert, R.N., was appointed as Director of Nursing, and Mrs. E. Latiff, R.N., and Mr. J. O. Johnson were appointed as Associate Directors of Nursing Service.

### OCCUPATIONAL THERAPY

A total of 540 patients attended occupational therapy classes. The activities of the occupational therapy classes consisted of sewing, embroidery, knitting, leather work, copper tooling and wood work.

Four students from the University of Alberta Occupational Therapy program spent six weeks here, during the summer, taking their internship.

The Occupational Therapist who was in charge of the department resigned at the end of January. An Occupational Therapist, formerly of the University of Alberta, was in charge of the department from May 1 to August 31, following which it was supervised by an Occupational Therapy Aide who has had long experience in this work.

### REHABILITATION UNIT

The Rehabilitation Unit opened a workshop in July in a building formerly used as a laundry. The workshop employed 36 patients. Seven men and 13 women have left the program through discharge, resignation, or transferring to other work areas.

The work done by the Rehabilitation Unit included the manufacture of paddle boards and unfinished furniture products, mostly kindergarten items.

The Rehabilitation Unit assumed the supervision of the Snack Bar in November, where approximately twelve patients were employed.

### SOCIAL SERVICE DEPARTMENT

The staff of the Social Service Department at the Alberta Hospital, Ponoka, consisted of nine Social Workers and a Secretary. The Out-Patient Department of the Foothills Hospital, Calgary, employed three full-time Social Workers, plus three who worked part of the year.

The combined Social Service staff conducted many thousands of interviews with patients, families and with other agencies.

A total of 357 patients were placed in Nursing Homes, After-Care Homes, Half-Way Houses, et cetera.

The members of the Social Service staff were involved in many hospital committees and also in several community committees.

### DEPARTMENT OF PSYCHOLOGY

The staff of the Psychology Department as at the end of the year consisted of five Psychologists and a Secretary.

Psychological testing continued to be one of the major services offered by this department; but members of the department took part in group, individual, family and behavioral therapy, as well as teaching.

Four individuals conducted research projects in Psychology. These Research Workers were associated with the University of Alberta and the University of Calgary.

### REVIEW PANEL

The Review Panel held seven meetings at the hospital and dealt with a total of 40 complaints from 37 patients, 30 men and seven women. The Review Panel revoked the Certificates in six cases.

In addition to the complaints heard, 14 complaints were not heard as nine of the patients had withdrawn their complaints, and five were not at the hospital when the Review Panel met.

### RECREATIONAL PROGRAMS

The Recreation Department maintained a full program of activities for the patients. An average of 1,134 patients attended functions in the recreation hall weekly, taking part in physical, cultural and socializing activities. Weekly film shows were attended by over 700 patients. Films were shown weekly on the Geriatric and Infirmary wards.

Patients from all wards, with the exception of those on the Infirmary ward, participated in picnics at nearby lakes. Two successful camping trips, ex-



tending for more than one week each, were held at Sylvan Lake with more than 100 patients attending. Week-end and overnight tenting trips took place throughout the summer.

The annual carnival held in June was very successful with almost all the patients in attendance.

Many social events, such as dances, ward parties, bingo and card parties were held for the enjoyment of the patients.

Twice a week, a bus load of patients was taken to the Town of Ponoka to bowl.

Special rehabilitative exercises were given each morning to crippled and disabled patients.

### RELIGIOUS SERVICES

Religious services were held at the hospital every Sunday conducted by the Clergy of Ponoka of the various denominations.

### THE EUGENICS BOARD OF ALBERTA

The Eugenics Board held one meeting at the hospital during the year. One female patient was presented to the Board and passed for eugenics surgery. One female patient was sterilized.

### FIRE PROTECTION

Twenty-eight fire alarms were sounded during the year, three of which were false. The remaining alarms were regarding fires of a minor nature, such as grass fires, fires in stuffed furniture in the hospital, and fires in waste baskets. Most of the fires in the buildings appeared to be due to careless smoking habits.

Fire Department training was conducted, with each member receiving two practice sessions monthly. In addition, fire prevention instructions were given to hospital staff members; during the year 349 staff members received this training.

Six members of the Fire Brigade attended the Alberta Fire Training School in Vermilion.

### BUSINESS ADMINISTRATION

Nineteen hundred and seventy saw a radical change in the administrative organization by the appointment of an Executive Director. Many departments which formerly were responsible to the Medical Superintendent became the responsibility of the Executive Director, resulting in better services being provided.

During the first half of the year, the Accountant assumed the dual role of Business Manager and Accountant until the appointment of a Business Manager Mr. A. Stafford, in July. The continuity was again disrupted by the resignation of the Accountant in September.

### HOUSEKEEPING DEPARTMENT

The Housekeeping Department provided services to all wards. Each ward had at least one full-time service worker assigned to it. The Geriatric ward had the services of this department on a seven-day basis.

In March, a housekeeping rehabilitation training program for patients was instituted. Nine men and four women completed the program. It was gratifying to note that two men and two women were discharged.

The supervision of the collection of wet garbage became the responsibility of the Housekeeping Department in 1970. This followed the transfer of the Gardens and Grounds Department to the Department of Public Works.

### LAUNDRY AND ANCILLARY SERVICES

This department continued to operate smoothly and effectively with the excellent co-operation of the staff.

There was no change in the number of staff as compared to last year; however, the patient help decreased considerably.

Clean linen was delivered to the departments five days a week, and soiled linen was collected every day.

The Linen Room was in operation each Saturday to take care of any emergencies which might arise.

The Dry Cleaning Department processed approximately 700 pounds of clothing each week, as compared with from 400 to 500 pounds in 1969. This proved to be a valuable service to the patients. They were able to have their clothes cleaned, whenever they desired, and more especially when they were admitted or discharged.

The Tailor Shop continued to operate efficiently with two full-time employees. They produced a great number of garments. They also made sheets and alterations on patients' and male staff uniforms, and kept the clothing in good repair.

The Sewing Room had a staff of two. They were responsible for all the alterations on female staff uniforms. In addition, they made draperies for the hospital.

### DIETARY DEPARTMENT

There were no innovations in this department, but the consolidation of the work commenced in 1969 to make it an effective, economic unit has progressed.

No suitable applications were received to replace the Dietitian II who resigned early in the year.

### GARAGE

The workload of the garage increased in 1970 by more than ten per cent. This was due to the larger number of patients transferred to other hospitals, Nursing Homes, and Foster Homes, from this hospital.

Many trips were made taking patients to lakes and picnic areas, which also contributed to the increase in the workload.

### BEAUTY PARLOUR AND BARBER SHOP

The Beauty Parlour and Barber Shop were fully utilized by the patients. There was an indication that the quality of the services had improved, particularly in the Barber Shop.

### EDUCATIONAL PROGRAMS

#### Medical Education

The Journal Club met once a week. It was attended by the Medical Staff, Psychologists and Social Workers.

Several members of the Medical Staff attended the Alberta Psychiatric Association's meetings which were held in the Province.



## Nursing Education

There were 285 students enrolled in the various educational programs in the School of Nursing, as follows:

(1) Four-year Combined General and Psychiatric Nursing Course	24
(2) Three-year Psychiatric Nursing Course	15
(3) Two-year Psychiatric Nursing Course	34
(4) Eight-week Affiliation Course	124
(5) College Affiliation Program	81
(6) Teaching and Supervision Students from the University of Saskatchewan	7

Twelve Nurses graduated in the Four-year General and Psychiatric Nursing Course, and 21 graduated in the Three-year Psychiatric Nursing Course.

The staff of the School of Nursing consisted of the Director of Nursing, the Associate Director of Nursing Education, 12 full-time Instructors, one part-time Instructor, and one part-time Instructor from January to October, 1970, plus two Clerk-Typists.

## IN-SERVICE TRAINING

Seventy-two persons participated in seven Orientation Classes of 30 hours each.

Fifty persons attended a one-day holiday relief Orientation Course of the Hospital, "Their Job and Fire Prevention".

Twenty-three members of the Alberta Service Corps spent three months on various projects, with the In-Service Education Supervisor acting as Co-Ordinator.

The Committee on Continuing Education carried out a 34-hour program for ten Graduate Nurses.

A two-day program for staff working with regressed patients was conducted for 110 staff members.

## PATIENTS' SCHOOL

In September, an Academic School program, financed by the Department of Education, was established at the hospital, for younger patients, with a full-time teacher being employed.

To date, all reports indicate the school to be very successful. The level of education varied from grade three to twelve. The number of patients attending daily varied, with as many as 25, and fewer on other occasions. Several patients attended the local Composite High School, following initial studies at the hospital school.

## VISITORS

The Director and Assistant Director of the Division of Mental Health were frequent visitors.

Many groups visited during the year, for a tour of the hospital, to hear talks, and hold discussions with staff members. The groups included Nurses from other Hospitals, University students, High School stu-

dents and Service Clubs. Five hundred and one visitors toured the hospital during the year.

## THE DEPARTMENT OF PUBLIC WORKS

### Maintenance Branch

The buildings were maintained in a very satisfactory condition. Many minor installations and renovations were made. Major renovations were made on two wards.

The buildings were kept attractive, both internally and externally.

Two buildings, a house no longer considered suitable for occupancy, and a barn which was no longer in use, were demolished.

There were certain changes made in the Pharmacy. An office for the Pharmacist was provided, and a small waiting area for out-patients, who came to the hospital for medication.

### Mechanical Branch

The power plant provided good service, and during the year generated 4,963,100 kilowatt hours, and 650,900 kilowatt hours were purchased.

The natural gas consumption totalled 296,076,000 cubic feet.

A power plant shut down was scheduled, on one occasion, to permit essential plant maintenance work to be done. The shut down was of two-hours duration. It was scheduled for the early evening hours of the day, during the summer, and no great inconvenience was experienced.

A number of power failures, of short duration, occurred in the power system from which power was purchased. These failures affected the Laundry only.

## GARDENS AND GROUNDS

In April the Department of Public Works assumed responsibility for the care of the gardens and grounds. A program of landscaping and improvement of the grounds was accomplished with good results. The lawns and hedges were well maintained, which along with the well tended flower beds, made the grounds very attractive in the summer months.

## CONCLUSION

The hospital patient population continued to decrease during the year, and with continued efforts being made to place long term patients in Nursing Homes and Foster Homes, it is hoped that the resident patient population may be further decreased.

A continuing problem was the recruitment of Medical Staff.

Thanks is extended to the Minister of Health, the Deputy Minister of Health, the Director and the Assistant Director of the Division of Mental Health, as well as to other agencies in the Health Department.

## DEPARTMENT OF HEALTH

TABLE 17

MOVEMENT OF PATIENT POPULATION  
ALBERTA HOSPITAL, PONOKA

ADMISSIONS:				M	F	T	M	F	T
First Admissions:									
Voluntary .....				37	28	65			
Two Medical Certificates .....				99	51	150			
Urgent Medical Certificate .....				57	21	78			
Warrant for Examination .....				3	—	3			
Warrant TB Act .....				—	—	—			
From NWT .....				—	—	—			
Remand for Observation .....				22	3	25			
Detention under Sec. 527, CCC .....				—	—	—			
From Gaol under M.H.A. ....				17	—	17			
From Penitentiary .....				1	—	1			
				236	103	339	236	103	339
Re-Admissions:									
Voluntary .....				89	69	158			
Two Medical Certificates .....				71	46	117			
Urgent Medical Certificat .....				48	19	67			
Warrant for Examination .....				2	1	3			
Warrant TB Act .....				—	—	—			
From NWT .....				—	—	—			
Remand for Observation .....				12	—	12			
Detention under Sec. 527, CCC .....				2	1	3			
From Gaol under M.H.A. ....				16	1	17			
From Penitentiary .....				1	—	1			
				241	137	378	241	137	378
Transfers In .....				—	—	—	—	—	—
ADMISSION TOTALS .....							477	240	717
SEPARATIONS:									
Clinical Progress	M	F	T	Type of Separation			M	F	T
Recovered .....	73	29	102	Direct Discharge .....			427	188	615
Improved .....	436	220	656	Discharge from Leave....			81	64	145
Unimproved ....	24	9	33	Discharge from					
Died .....	42	17	59	Unauthorized Leave....			20	3	23
TOTAL .....	575	275	850	Deportation .....			5	3	8
				Transfer Out .....			42	17	59
				Death .....					
				TOTAL .....			575	275	850
SEPARATION TOTALS .....							575	275	850
Patients on Books, December 31, 1969 .....							576	329	905
Patients on Books, December 31, 1970 .....							478	294	772
Patients in Residence, December 31, 1970 .....							431	262	693
Patients on Leave or Otherwise Absent, December 31, 1970 .....							47	32	79

TABLE 18

FIRST ADMISSIONS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	10	10	20	5.9
291	Alcoholic Psychosis .....	15	1	16	4.7
292	Psychosis Associated with Intracranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	25	4	29	8.6
294	Psychosis Associated with Other Physical Conditions .....	6	—	6	1.8
295	Schizophrenia .....	44	24	68	20.1
296	Affective Psychoses .....	10	7	17	5.0
297	Paranoid States .....	7	1	8	2.3
298	Other Psychoses .....	1	1	2	0.6
299	Unspecified Psychoses .....	—	—	—	—
300	Neuroses .....	21	25	46	13.6
301	Personality Disorders .....	35	6	41	12.1
302	Sexual Deviation .....	5	1	6	1.8
303	Alcoholism .....	25	6	31	9.1
304	Drug Dependence .....	4	2	6	1.8
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	13	7	20	5.9
308	Behaviour Disorders of Childhood .....	1	—	1	0.3
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	4	2	6	1.8
310-					
315	Mental Retardation .....	7	4	11	3.2
345	Epilepsy .....	—	—	—	—
793	Observation Without Need for Further Medical Care .....	3	2	5	1.4
TOTALS		236	103	339	100.0

TABLE 19

RE-ADMISSIONS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	3	—	3	0.8
291	Alcoholic Psychosis .....	8	4	12	3.2
292	Psychosis Associated with Intracranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	3	1	4	1.1
294	Psychosis Associated with Other Physical Conditions .....	1	1	2	0.5
295	Schizophrenia .....	110	66	176	46.5
296	Affective Psychoses .....	21	16	37	9.8
297	Paranoid States .....	3	6	9	2.4
298	Other Psychoses .....	—	2	2	0.5
299	Unspecified Psychoses .....	—	—	—	—
300	Neuroses .....	20	23	43	11.3
301	Personality Disorders .....	28	6	34	9.0
302	Sexual Deviation .....	4	—	4	1.1
303	Alcoholism .....	18	2	20	5.3
304	Drug Dependence .....	1	—	1	0.3
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	5	4	9	2.4
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	4	1	5	1.3
310-					
315	Mental Retardation .....	12	5	17	4.5
345	Epilepsy .....	—	—	—	—
793	Observation Without Need for Further Medical Care .....	—	—	—	—
TOTALS		241	137	378	100.0

TABLE 20  
AGE OF PATIENTS ON ADMISSION  
ALBERTA HOSPITAL, PONOKA

Ages	First Admissions			Readmissions			Transfers			Total			%
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
Under 15 years .....	2	1	3	—	2	2	—	—	—	2	3	5	0.7
15 to 19 years .....	32	17	49	8	3	11	—	—	—	40	20	60	8.4
20 to 24 years .....	38	17	55	30	8	38	—	—	—	68	25	93	13.0
25 to 29 years .....	29	9	38	34	8	42	—	—	—	63	17	80	11.2
30 to 34 years .....	17	3	20	32	16	48	—	—	—	49	19	68	9.5
35 to 39 years .....	20	11	31	25	15	40	—	—	—	45	26	71	9.9
40 to 44 years .....	17	12	29	30	12	42	—	—	—	47	24	71	9.9
45 to 49 years .....	15	9	24	19	16	35	—	—	—	34	25	59	8.2
50 to 54 years .....	14	3	17	22	23	45	—	—	—	36	26	62	8.6
55 to 59 years .....	10	5	15	12	11	23	—	—	—	22	16	38	5.3
60 to 64 years .....	13	2	15	16	6	22	—	—	—	29	8	37	5.2
65 to 69 years .....	8	5	13	4	12	16	—	—	—	12	17	29	4.0
70 and over .....	21	9	30	9	5	14	—	—	—	30	14	44	6.1
TOTALS .....	236	103	339	241	137	378	—	—	—	477	240	717	100.0

TABLE 21  
ADMISSIONS AND RE-ADMISSIONS BY A GEOGRAPHIC AREA  
ALBERTA HOSPITAL, PONOKA

Geographic Area	Ref. No.	Admissions				Re-admissions				Total			
		Male	Female	Total	%	Male	Female	Total	%	Male	Female	Total	%
City of Edmonton .....	1	6	1	7	2.1	12	3	15	4.0	18	4	22	3.1
City of Calgary .....	2	68	30	98	28.9	74	41	115	30.4	142	71	213	29.8
City of Lethbridge .....	3	13	6	19	5.6	9	3	12	3.2	22	9	31	4.3
Banff National Park .....	4	—	—	—	—	1	1	2	0.5	1	1	2	0.3
Jasper National Park .....	5	—	1	1	0.3	—	—	—	—	—	1	1	0.1
Alberta East Central Health Unit .....	6	19	19	38	11.2	22	8	30	7.9	41	27	68	9.5
Athabasca Health Unit .....	7	—	—	—	—	—	—	—	—	—	—	—	—
Barons-Eureka Health Unit .....	8	3	1	4	1.2	6	3	9	2.4	9	4	13	1.8
Big Country Health Unit .....	9	5	1	6	1.8	2	—	2	0.5	7	1	8	1.1
Chief Mountain Health Unit .....	10	2	—	2	0.6	1	1	2	0.5	3	1	4	0.6
Chinook Health Unit .....	11	4	1	5	1.5	3	4	7	1.9	7	5	12	1.7
County of Warner Health Unit .....	12	—	—	—	—	2	—	2	0.5	2	—	2	0.3
Drumheller Health Unit .....	13	6	1	7	2.1	6	5	11	2.9	12	6	18	2.5
Edson Health Unit .....	14	—	—	—	—	—	2	2	0.5	—	2	2	0.3
Foothills Health Unit .....	15	3	1	4	1.2	4	5	9	2.4	7	6	13	1.8
Grande Prairie Health Unit .....	16	—	—	—	—	—	1	1	0.3	—	1	1	0.1
Leduc-Strathcona Health Unit .....	17	—	—	—	—	—	1	1	0.3	—	1	1	0.1
Medicine Hat Health Unit .....	18	5	3	8	2.4	2	5	7	1.9	7	8	15	2.1
Minburn-Vermilion Health Unit .....	19	—	—	—	—	1	1	2	0.3	—	1	1	0.1
Mount View Health Unit .....	20	3	2	5	1.5	10	3	13	3.4	13	5	18	2.5
North Eastern Alberta Health Unit .....	21	—	—	—	—	—	—	—	—	—	—	—	—
Peace River Health Unit .....	22	—	—	—	—	—	1	1	0.3	—	1	1	0.1
Red Deer Health Unit .....	23	36	16	52	15.3	28	24	52	13.7	64	40	104	14.5
Stony Plain-Lac Ste. Anne Health Unit .....	24	1	—	1	0.3	2	—	2	0.5	3	—	3	0.4
Sturgeon Health Unit .....	25	—	1	1	0.3	—	1	1	0.3	—	2	2	0.3
Vegreville Health Unit .....	26	—	—	—	—	1	1	2	0.5	1	1	2	0.3
Wetoka Health Unit .....	27	21	6	27	7.9	28	16	44	11.6	49	22	71	9.9
Northern Alberta Health Services .....	28	—	—	—	—	—	1	1	0.3	—	1	1	0.1
Municipalities not in Health Units .....	29	—	—	—	—	—	—	—	—	—	—	—	—
Indian Reserves .....	30	7	5	12	3.5	7	4	11	2.9	14	9	23	3.2
Other Provinces .....	31	26	3	29	8.5	2	1	3	0.8	28	4	32	4.5
Territories .....	32	—	—	—	—	—	—	—	—	—	—	—	—
Outside Canada .....	33	—	1	1	0.3	—	—	—	—	—	1	1	0.1
No Fixed Abode .....	34	9	3	12	3.5	19	1	20	5.3	28	4	32	4.5
TOTAL .....		237	102	339	100.0	241	137	378	100.0	478	239	717	100.0



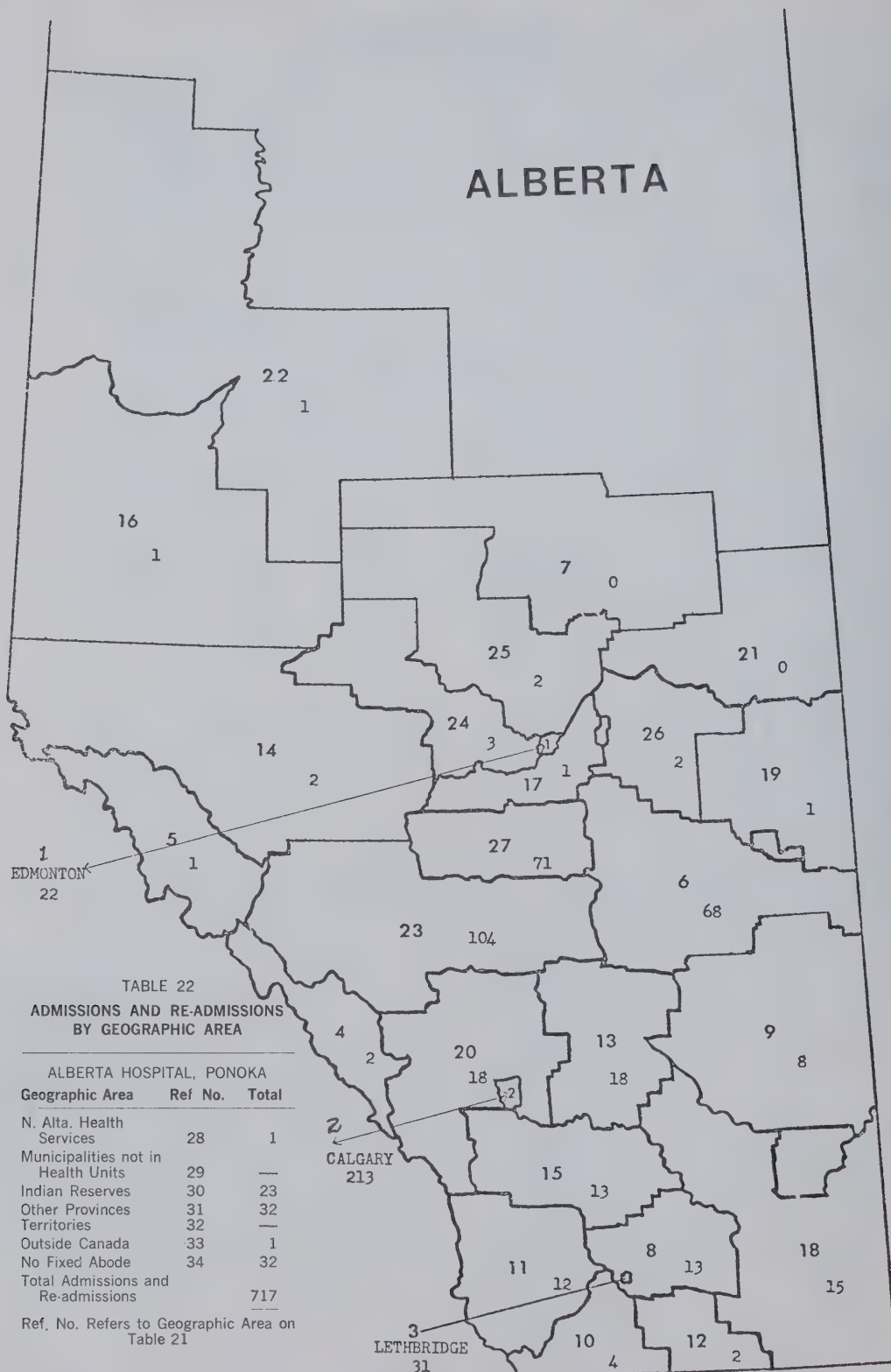


TABLE 23

PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ALBERTA HOSPITAL, PONOKA

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia	17	36	53	6.9
291	Alcoholic Psychosis	22	1	23	3.0
292	Psychosis Associated with Intracranial Infection	12	4	16	2.1
293	Psychosis Associated with Other Cerebral Condition	43	40	83	10.7
294	Psychosis Associated with Other Physical Conditions	1	2	3	0.4
295	Schizophrenia	238	124	362	46.9
296	Affective Psychoses	25	22	47	6.1
297	Paranoid States	20	10	30	3.9
298	Other Psychoses	6	1	7	1.0
299	Unspecified Psychoses	6	2	8	1.0
300	Neuroses	10	21	31	4.0
301	Personality Disorders	18	5	23	3.0
302	Sexual Deviation	4	—	4	0.5
303	Alcoholism	17	1	18	2.3
304	Drug Dependence	3	1	4	0.5
305	Physical Disorders of Presumably Psychogenic Origin	—	1	1	0.1
306	Special Symptoms not Elsewhere Classified	—	—	—	—
307	Transient Situational Disturbances	8	7	15	1.9
308	Behaviour Disorders of Childhood	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions	13	7	20	2.6
310-	Mental Retardation	15	9	24	3.1
345	Epilepsy	—	—	—	—
793	Observation Without Need for Further Medical Care	—	—	—	—
TOTALS		478	294	772	100.0

TABLE 24

DISCHARGES BY PSYCHIATRIC DIAGNOSIS AND CLINICAL PROGRESS  
ALBERTA HOSPITAL, PONOKA

Diagnostic Classification	Improved				Unimproved				Recovered				Total			
	M	F	T	%	M	F	T	%	M	F	T	%	M	F	T	%
Senile and Presenile Dementia	8	8	16	2.4	2	1	3	9.1	—	—	—	—	10	9	19	2.4
Alcoholic Psychosis	10	5	15	2.3	—	—	—	—	12	2	14	13.7	22	7	29	3.7
Psychosis Associated with Intracranial Infection	3	—	3	0.5	—	—	—	—	—	—	—	—	3	—	3	0.4
Psychosis Associated with Other Cerebral Condition	28	3	31	4.7	3	1	4	12.1	—	—	—	—	31	4	35	4.4
Psychosis Associated with Other Physical Conditions	3	1	4	0.6	—	—	—	—	4	1	5	4.9	7	2	9	1.1
Schizophrenia	154	76	230	35.1	4	3	7	21.2	31	9	40	39.2	189	88	277	35.0
Affective Psychoses	22	20	42	6.4	—	—	—	—	10	9	19	18.6	32	29	61	7.7
Paranoid States	12	9	21	3.2	—	—	—	—	—	—	—	—	12	9	21	2.7
Other Psychoses	—	2	2	0.3	—	—	—	—	—	—	—	—	—	2	2	0.2
Unspecified Psychoses	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Neuroses	42	50	92	14.0	—	—	—	—	9	6	15	14.7	51	56	107	13.5
Personality Disorders	49	14	63	9.6	9	1	10	30.3	1	—	1	0.9	59	15	74	9.4
Sexual Deviation	5	—	5	0.8	1	1	2	6.1	2	—	2	2.0	8	1	9	1.1
Alcoholism	47	9	56	8.5	1	—	1	3.0	1	—	1	1.0	49	9	58	7.4
Drug Dependence	5	2	7	1.1	—	—	—	—	—	—	—	—	5	2	7	0.9
Physical Disorders of Presumably Psychogenic Origin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Special Symptoms not Elsewhere Classified	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transient Situational Disturbances	22	16	38	5.8	1	1	2	6.1	—	—	—	—	23	17	40	5.1
Behaviour Disorders of Childhood	2	—	2	0.3	—	—	—	—	—	—	—	—	2	—	2	0.3
Mental Disorders not Specified as Psychotic Associated with Physical Conditions	6	2	8	1.2	—	1	1	3.0	—	—	—	—	6	3	9	1.1
Mental Retardation	17	3	20	3.0	3	—	3	9.1	—	—	—	—	20	3	23	2.9
Epilepsy	1	—	1	0.2	—	—	—	—	—	—	—	—	1	—	1	0.1
Observation Without Need for Further Medical Care	—	—	—	—	—	—	—	—	3	2	5	5.0	3	2	5	0.6
TOTAL	436	220	656	100.0	24	9	33	100.0	73	29	102	100.0	533	258	791	100.0
PER CENT OF TOTAL	55.1	27.8	82.9		3.1	1.1	4.2		9.2	3.7	12.9		67.4	32.6		100.0

TABLE 25  
DISCHARGES BY PSYCHIATRIC DIAGNOSIS SHOWING NUMBER OF DAYS IN HOSPITAL  
ALBERTA HOSPITAL, FORTUNA

Diagnostic Classification	Under 90 days			Under 182 days			Under 273 days			Under 365 days			Under 730 days			Over 730 days			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Senile and Presenile Dementia	5	3	8	1	3	4	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Alcoholic Psychosis	13	4	17	3	2	1	3	2	1	1	1	2	1	1	2	1	1	2	1	1	2
Psychosis Associated with Intracranial Infection	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Psychosis Associated with Other Cerebral Conditions	7	1	8	1	5	1	6	4	3	—	3	3	7	1	4	—	4	12	6	13	3
Psychosis Associated with Other Physical Conditions	4	—	4	0	3	1	4	2	3	—	3	3	1	1	4	—	4	12	6	13	3
Schizophrenia	88	27	115	26	34	1	4	2	8	—	13	40	1	1	2	—	13	40	1	1	2
Affective Psychoses	25	14	39	8	9	13	10	4	1	1	1	2	1	1	2	—	1	2	1	1	2
Paranoid States	6	4	10	2	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Psychoses	—	2	2	0	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unspecified Psychoses	37	78	177	5	11	16	11	1	1	2	2	3	7	1	4	—	2	3	7	1	4
Neuroses	41	5	53	12	6	4	10	7	0	2	2	2	4	1	3	—	2	4	1	1	3
Personality Disorders	50	8	68	1	2	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Sexual Deviation	42	8	50	1	6	1	7	4	9	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism	4	2	6	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Drug Dependence	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Physical Disorders of Presumably Psychogenic Origin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Special Symptoms not Elsewhere Classified	14	9	23	—	5	3	8	5	1	3	4	9	1	2	3	—	1	2	2	3	4
Transient Situational Disturbances	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Behavioral Disorders of Childhood	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Behavioral Disorders of Childhood as Psychotic Associated with Physical Conditions	2	1	3	0	2	1	3	2	1	—	1	1	1	1	1	—	1	1	1	1	1
Mental Retardation	10	1	11	2	3	1	4	2	1	—	—	—	—	—	—	—	—	—	—	—	—
Epilepsy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Observation Without Need for Further Medical Care	3	2	5	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	319	121	440	100	81	63	144	100	21	21	42	100	27	18	45	100	66	22	88	100	533
PERCENT OF TOTAL	40.3	15.3	55.6	10.2	8.0	18.2	10.2	8.0	18.2	2.7	2.7	5.4	3.4	2.3	5.7	8.3	2.8	11.1	67.4	32.6	100.0



TABLE 26  
TREATMENT SUMMARY OF DISCHARGED PATIENTS  
ALBERTA HOSPITAL, PONOKA

Kind of Treatment	Number of Patients Receiving These Kinds of Treatment		
	Male	Female	Total
Drugs .....	484	248	732
Electrotherapy .....	74	41	115
Individual Psychotherapy .....	531	257	788
Group Therapy .....	512	252	764
Other .....	118	42	160
TOTALS .....	1,719	840	2,559

TABLE 27  
CAUSES OF DEATH  
(ICDA-8)  
ALBERTA HOSPITAL, PONOKA

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	—	—	—
Neoplasms .....	2	1	3
Endocrine, Nutritional and Metabolic Diseases .....	—	—	—
Diseases of the Nervous System and Sense Organs .....	—	—	—
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	12	9	21
Diseases of the Respiratory System .....	26	7	33
Diseases of the Digestive System .....	1	—	1
Diseases of the Genitourinary System .....	—	—	—
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	—	—
Symptoms and Ill-Defined Conditions .....	—	—	—
Accidents, Poisoning and Violence* .....	1	—	1
Diseases of the Musculo-skeletal System .....	—	—	—
TOTALS .....	42	17	59

\*Suicide

TABLE 28  
AGES AT DEATH  
ALBERTA HOSPITAL, PONOKA

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	1	—	1
30 - 39 .....	1	—	1
40 - 49 .....	2	—	2
50 - 59 .....	3	5	8
60 - 69 .....	9	3	12
70 - 79 .....	16	7	23
80 - 89 .....	8	1	9
90 - 99 .....	2	—	3
100 and over .....	—	—	—
TOTAL .....	42	17	59

TABLE 29  
DEATHS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, PONOKA

Diagnostic Classification	Male	Female	Total
Senile and Presenile Dementia .....	5	5	10
Alcoholic Psychosis .....	2	—	2
Psychosis Associated with Intracranial Infection .....	1	—	1
Psychosis Associated with Other Cerebral Condition .....	16	4	20
Psychosis Associated with Other Physical Conditions .....	1	1	2
Schizophrenia .....	8	3	11
Affective Psychoses .....	4	1	5
Paranoid States .....	2	2	4
Other Psychoses .....	—	—	—
Unspecified Psychoses .....	—	—	—
Neuroses .....	2	1	3
Personality Disorders .....	1	—	1
Sexual Deviation .....	—	—	—
Alcoholism .....	—	—	—
Drug Dependence .....	—	—	—
Physical Disorders of Presumably Psychogenic Origin .....	—	—	—
Special Symptoms not Elsewhere Classified .....	—	—	—
Transient Situational Disturbances .....	—	—	—
Behaviour Disorders of Childhood .....	—	—	—
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	—	—
Mental Retardation .....	—	—	—
Epilepsy .....	—	—	—
Observation Without Need for Further Medical Care .....	—	—	—
TOTALS .....	42	17	59

## ALBERTA HOSPITAL, EDMONTON

C. P. Hellon, M.B., Ch.B., D.P.M., F.R.C.P.(C),  
Medical Superintendent

A. D. Mitchell, B.Comm., D.H.A., Executive Director

### MOVEMENT OF IN-PATIENT POPULATION

On December 31, 1970, there were 991 patients, 588 males and 403 females, on the books. There were 846 patients, 528 males and 318 females, in residence. There were 145 on leave of absence.

On December 31, 1969, there were 1,059 patients, 650 males and 409 females, on the books. There were 916 patients, 572 males and 344 females, in residence. There were 143 on leave of absence.

### Admissions

There were 1,593 males and 962 females admitted in 1970 for a total of 2,555, for an increase of 347 or 16% over 1969. Of those admitted, 1,209 (762 men and 447 women) were first admissions and 1,345 (830 men and 515 women) were readmissions. One patient was transferred in from another hospital within the Division.

Voluntary admissions accounted for 1,466 of the total admissions, 382 were by two medical certificates, 374 were urgent certificates, 102 by warrant for examination, four by warrant under The Tuberculosis Act, 27 under warrant from the Northwest Territories, 148 were on remand for observation, three under Section 527 and 48 were admitted on transfer from gaol.

Of the 756 patients admitted by medical certificates, 312 patients or 41.3% subsequently signed voluntary forms and 64 patients or 4.4% who were admitted voluntarily had to be certified.

### Separations

A total of 2,623 patients were discharged, 1,655 men and 968 women, for an increase of 13% over 1969. Of the total discharged, 1,570 patients were discharged direct, 947 were discharged from leave and 43 were discharged from escape. Two men and two women were transferred to other hospitals within the Division. There were 59 deaths.

## HEALTH OF PATIENTS

There were no major accidents and no epidemics in 1970. Six patients committed suicide.

## CLINICAL WORK

The reorganization of the clinical work continued. Additional specialist units were created and these units now include an Admissions Unit of 210 beds; a Unit featuring Maximum Security of 144 beds; a Geriatric Unit of 210 beds; a Rehabilitation Unit of 191 beds and an Adolescent Unit of 24 beds. Also maintained was a T.B. Unit of 36 beds and, out of necessity, a Mental Deficiency Unit of 48 beds. Within the Admitting area a unit of 42 beds was set up for the treatment of alcoholic and drug addicted patients. Electroconvulsive therapy continued to be a popular treatment for various disorders.

A very useful liaison with the Division of Alcoholism was effected and the admission of patients in acute withdrawal states continued to decline to a very satisfactory level.

The major difficulty was encountered in the accommodation of geriatric patients.

The medical staff position continued to improve. Five residents in training were employed throughout the year and the geriatric area came under the supervision of a certified internist. Two more psychiatrists were added to the list of sessional consultants and eight medical students were employed over the summer period. Fourth-year medical students continued to attend the hospital on a regular basis during their eight-week internship in psychiatry.

Dr. Cornish, Clinical Director, continued to be the Alberta representative on the Constitutional Committee of the Canadian Psychiatric Association. In connection with the preparation for accreditation, Dr. Cornish visited several accredited hospitals during the year and Dr. Willey visited Maimonides Hospital in Montreal in connection with the planning of the new Infirmary.

The community work of the hospital continued to expand and three more out-patient clinics were opened in Public Health facilities in the city. A total attendance of 605 females and 299 males was recorded. The Community Nursing Department became exceptionally busy and achieved a total of 5,469 interviews of which 4,731 were conducted at the patient's residence.

Treatment of tuberculosis patients continued as before.

Pathological services were provided as before by city laboratories and a satisfying increase in autopsies was achieved.

### NURSING SERVICES

To better utilize the available nursing staff a steady effort was made throughout 1970 to organize nursing service more efficiently. Early in the year the goal of unification of nursing service was finally realized. No longer was the organizational pattern for direct patient care divided into a "male" and "female" division with each directly responsible to the Medical Superintendent. In the new organization the Director of Nursing now heads the Department of Nursing with two Associate Directors of Nursing Service — each assigned to a designated number of special function units.

A steady effort was made to integrate patients, with a high percentage of the wards being integrated. In addition to the therapeutic value of integration, it is believed that this step assisted and eased the way to a truly integrated service.

Staff patrols of the hospital grounds were made three times daily in an attempt to prevent unauthorized leaves and suicides.

### X-RAY

During 1970, 5,937 patients were examined, involving the use of 8,487 films. This represented an increase of 13% in the number of patients examined and 19% in the number of films used. Significant increases occurred in the more complex examinations such as skull examinations, G.I. barium procedures, I.V.P.'s and cholecystograms.

All films were interpreted by a qualified radiologist.

This Department also administered, graded and recorded 349 tuberculin tests.

### LABORATORY

The Laboratory handled 25,772 tests within the hospital and sent 7,863 tests to city laboratories. Although the number of tests performed decreased by 2%, the unit value of tests increased by 13%. The reason for the increased number of tests being sent to city laboratories was the inability of the hospital to recruit and hold qualified laboratory staff.

### EEG and ECG SERVICE

There were 621 EEG's and 263 ECG's done at the hospital. In addition, our technician handled 112 EEG's at Alberta Hospital, Ponoka. This represented an increase of 12% for EEG's and 10% for ECG's over the previous year.

### PHYSIOTHERAPY DEPARTMENT

The Physiotherapy Department was set up in the old X-Ray Department of #8 Building with a minimum of equipment. One hundred and ninety patients were seen during the year. The following variety of treatments were given: Heat, Short Wave Diathermy, Ultra Violet Light, Massage, Exercises, Wax Baths and Traction. The Department handled patients suffering from arthritis, cerebral vascular diseases, fractures, joint and soft tissue injuries. The Department was also concerned with the fitting of ten patients with modified shoes and five with below knee braces.

### PSYCHOLOGY DEPARTMENT

During the year the Psychology Department streamlined its services and also moved into the therapeutic realm. A total of eighty-six patients were involved in individual psychotherapy; one hundred were involved in group psychotherapy and 32 patients were seen by the Psychology Department in follow-up. Behaviour Therapy became ever more popular with two psychologists specializing in this. The following number of patients were treated:

Systematic Desensitization	8
Individual Behaviour Modification	60
Relaxation Therapy only	46
Drug Aversion Therapy	27
Alcohol Aversion	68
Sex Deviation	7

There were 948 patients seen by the Psychology Department during the year for testing and therapy.

### SOCIAL SERVICE DEPARTMENT

With the appointment of a new Director for the Department in late 1970, the implementation of a reorganization plan was started. The priority need was a system to relieve the hospital of the large number of chronic and geriatric patients who could be cared for in other facilities. The first phase of the reorganization was the introduction of a program in regard to living accommodation, occupational and employment resources and recreational resources for discharged patients.



During 1970 there was a significant increase in the involvement of the Social Service Department, both in regard to interviews, conferences, et cetera, with patients and staff within the hospital, and also in the community home visits, consultations with other agencies, follow-ups, et cetera.

Placements of patients were as follows:

a. Auxiliary Hospitals	10
b. Nursing Homes	116
c. Other Hospitals	11
d. After-Care Homes	133
e. Half-Way Houses	21
f. Other Accommodation	89
g. Sheltered Workshop	124
h. Other Treatment Centres	6
i. Rehabilitation Centre	4
j. Employment	19

### OCCUPATIONAL THERAPY DEPARTMENT

The Occupational Therapy Department developed further and was staffed by one Occupational Therapist III, three Occupational Therapists I and eight Occupational Therapy Aides. Five of the staff attended the Occupational Therapy Aide Course at the University of Alberta. Both the Occupational and Industrial Therapy areas were very active and more attention was directed to those patients confined to the wards. Occupational Therapists attended ward meetings. The Industrial Therapy Department acquired another ten power machines, including sewing machines, and a hand operated printing press was also obtained.

### RECREATIONAL THERAPY DEPARTMENT

The Recreational Therapy Department saw the retirement of the two senior workers. A good program of activities including badminton, volleyball, table tennis, billiards, concerts, tennis, football, miniature golf and skating was available and supervised walks and outings also took place. Patients were also conveyed to the city to activities such as hockey games, wrestling matches, football games, et cetera. This was done for about forty patients four times per month. Weekly movies were provided to those wards for patients unable to attend Cameron Hall.

### EDUCATIONAL SERVICES

Inservice educational programs were provided for the orientation of new staff, to up-grade the knowledge of non-professional staff and supplement the training of graduate staff.

The School of Nursing had nine staff on the faculty. At the end of the year there were 24 students in the first-year of the new Nursing Training Program and 32 students in the Third Year of the previous 3-year program. Twenty-two students graduated in 1970.

Four general hospitals continued to send students for two-months psychiatric nursing affiliation — a total of 167 students from the Royal Alexandra Hospital and Misericordia Hospital, Edmonton; St. Joseph's Hospital, Vegreville; and Archer Memorial Hospital, Lamont. In addition there were 39 students from the University of Alberta, School of Nursing, B.Sc. Program and 21 students from the Edmonton General Hospital for psychiatric affiliation.

An academic school program for adolescents was commenced, with regular teachers being utilized. This was possible through liaison with the Edmonton Public School Board.

### REVIEW PANEL

The Review Panel held 24 meetings and dealt with a total of 48 complaints from 43 patients, 25 men and 18 women. Five persons complained twice on separate certificates. The Review Panel upheld the issuance of certificates in 37 cases and in 11 cases the certificates were revoked.

### EUGENICS BOARD

The Eugenics Board held three meetings at the hospital. Four males and 19 females were presented (15 had been previously seen by an Alberta Guidance Clinic). Twenty-two cases were passed by the Board for surgery and one case was deferred. Seventeen patients, three male and 14 female, were sterilized at the hospital during the year.

### FIRE PROTECTION

There were 36 fire practices held for members of the volunteer fire brigade. Seven members of the brigade attended Fire Training School in Vermilion. Attendance at the 37 fire prevention lectures and demonstrations totalled 984, a significant increase over the previous year. Forty-three alarms were received, 22 of which were false. Eighteen involved fires on the hospital grounds and three calls were answered off-the-hospital premises. Estimated damage caused by fires on the hospital grounds was \$865.00. Routine monthly inspections of all equipment were carried out.

### DEPARTMENT OF PUBLIC WORKS

In August, 1970, the Department of Public Works established the position of Physical Plant Manager for the hospital. This has improved the communication and coordination in providing better physical facilities and services.

### NEW CONSTRUCTION AND RENOVATIONS

Construction of a new Infirmary Building was in progress during the entire year. A Power Plant addition, together with installation of a new Turbine and Control Console, continued. Ventilation and mechanical improvements were carried out in the Laundry. Water and sewer extensions were continued. Improvement to the Fire Alarm System was commenced. A new skating rink and summer facility was commenced. Considerable site development was undertaken and partially completed, which included new roadways and parking areas.

### CONCLUSION

The year 1970 was one of change and development for the Alberta Hospital, Edmonton. On May 1 the first Executive Director of the hospital was appointed. Together with the Medical Superintendent, the Executive Director is responsible for the overall operation of the hospital.

Reorganization of the hospital services continued to receive attention in an attempt to improve patient care and operate in a more effective and efficient manner.



## DEPARTMENT OF HEALTH

TABLE 30  
MOVEMENT OF PATIENT POPULATION  
ALBERTA HOSPITAL, EDMONTON

ADMISSIONS:				M	F	T	M	F	T
First Admissions:									
Voluntary .....				346	229	575			
Two Medical Certificates .....				134	106	240			
Urgent Medical Certificate .....				137	80	217			
Warrant for Examination .....				19	17	36			
Warrant TB Act .....				3	1	4			
From NWT .....				15	4	19			
Remand for Observation .....				88	7	95			
Detention under Sec. 527, CCC .....				—	1	1			
From Gaol under M.H.A. ....				20	2	22			
From Penitentiary .....				—	—	—			
				762	447	1,209	762	447	1,209
Re-admissions:									
Voluntary .....				529	362	891			
Two Medical Certificates .....				78	64	142			
Urgent Medical Certificate .....				104	53	157			
Warrant for Examination .....				40	26	66			
Warrant TB Act .....				—	—	—			
From NWT .....				8	—	8			
Remand for Observation .....				46	7	53			
Detention under Sec. 527, CCC .....				2	—	2			
From Gaol under M.H.A. ....				23	3	26			
From Penitentiary .....				—	—	—			
				830	515	1,345	830	515	1,345
Transfers In .....							1	—	1
ADMISSION TOTALS .....							1,593	962	2,555
SEPARATIONS:									
Clinical Progress	M	F	T	Type of Separation			M	F	T
Recovered .....	109	33	142	Direct Discharge .....			1,184	386	1,570
Improved .....	1,195	812	2,007	Discharge from Leave .....			395	552	947
Unimproved .....	308	107	415	Discharge from					
Died .....	43	16	59	Unauthorized Leave ....			31	12	43
				Deportation .....			—	—	—
TOTAL .....	1,655	968	2,623	Transfer Out .....			2	2	4
				Death .....			43	16	59
				TOTAL .....			1,655	968	2,623
SEPARATION TOTALS .....							1,655	968	2,623
Patients on Books, December 31, 1969 .....									
							650	409	1,059
Patients on Books, December 31, 1970 .....									
							588	403	991
Patients in Residence, December 31, 1970 .....									
							528	318	846
Patients on Leave or Otherwise Absent, December 31, 1970 .....									
							60	85	145

TABLE 31

FIRST ADMISSIONS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, EDMONTON

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	38	30	68	5.6
291	Alcoholic Psychosis .....	18	2	20	1.6
292	Psychosis Associated with Intracranial Infection .....	1	—	1	0.1
293	Psychosis Associated with Other Cerebral Condition .....	24	8	32	2.7
294	Psychosis Associated with Other Physical Conditions .....	15	11	26	2.2
295	Schizophrenia .....	102	98	200	16.5
296	Affective Psychoses .....	29	42	71	5.9
297	Paranoid States .....	8	4	12	1.0
298	Other Psychoses .....	2	2	4	0.3
299	Unspecified Psychoses .....	3	1	4	0.3
300	Neuroses .....	96	86	182	15.0
301	Personality Disorders .....	114	59	173	14.3
302	Sexual Deviation .....	11	—	11	0.9
303	Alcoholism .....	170	22	192	15.8
304	Drug Dependence .....	33	14	47	3.9
305	Physical Disorders of Presumably Psychogenic Origin .....	—	1	1	0.1
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	27	29	56	4.6
308	Behaviour Disorders of Childhood .....	15	7	22	1.8
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	9	5	14	1.2
310-	Mental Retardation .....	17	19	36	3.0
315	Epilepsy .....	11	3	14	1.2
345	Observation Without Need for Further Medical Care .....	19	4	23	2.0
793	TOTALS .....	762	447	1,209	100.0

TABLE 32

RE-ADMISSIONS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, EDMONTON

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	20	6	26	1.9
291	Alcoholic Psychosis .....	21	5	26	1.9
292	Psychosis Associated with Intracranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	12	8	20	1.5
294	Psychosis Associated with Other Physical Conditions .....	1	3	4	0.3
295	Schizophrenia .....	258	239	497	36.9
296	Affective Psychoses .....	28	54	82	6.1
297	Paranoid States .....	6	—	6	0.5
298	Other Psychoses .....	2	1	3	0.2
299	Unspecified Psychoses .....	1	1	2	0.1
300	Neuroses .....	68	72	140	10.4
301	Personality Disorders .....	96	40	136	10.1
302	Sexual Deviation .....	8	—	8	0.6
303	Alcoholism .....	219	48	267	19.9
304	Drug Dependence .....	21	6	27	2.0
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	2	—	2	0.2
307	Transient Situational Disturbances .....	10	8	18	1.3
308	Behaviour Disorders of Childhood .....	2	1	3	0.2
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	3	2	5	0.4
310-	Mental Retardation .....	25	11	36	2.7
315	Epilepsy .....	19	10	29	2.2
345	Observation Without Need for Further Medical Care .....	8	—	8	0.6
793	TOTALS .....	830	515	1,345	100.0

TABLE 33  
AGE OF PATIENTS ON ADMISSION  
ALBERTA HOSPITAL, EDMONTON

Ages	First Admissions			Readmissions			Transfers			Total			%
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
Under 15 years .....	13	20	33	3	—	3	—	—	—	16	20	36	1.4
15 to 19 years .....	109	74	183	50	29	79	1	—	1	160	103	263	10.3
20 to 24 years .....	127	72	199	112	50	162	—	—	—	239	122	361	14.1
25 to 29 years .....	109	53	162	99	56	155	—	—	—	208	109	317	12.4
30 to 34 years .....	73	48	121	96	59	155	—	—	—	169	107	276	10.8
35 to 39 years .....	54	37	91	95	69	164	—	—	—	149	106	255	10.0
40 to 44 years .....	65	29	94	130	58	188	—	—	—	195	87	282	11.0
45 to 49 years .....	50	24	74	97	73	170	—	—	—	147	97	244	9.5
50 to 54 years .....	36	22	58	49	38	87	—	—	—	85	60	145	5.7
55 to 59 years .....	31	9	40	26	33	59	—	—	—	57	42	99	3.9
60 to 64 years .....	23	13	36	26	22	48	—	—	—	49	35	84	3.3
65 to 69 years .....	22	11	33	20	16	36	—	—	—	42	27	69	2.7
70 and over .....	50	35	85	27	12	39	—	—	—	77	47	124	4.9
TOTALS .....	762	447	1,209	830	515	1,345	1	—	1	1,593	962	2,555	100.0

TABLE 34  
ADMISSIONS AND READMISSIONS BY GEOGRAPHIC AREA  
ALBERTA HOSPITAL, EDMONTON

Geographic Area	Ref. No.	Admissions			%	Readmissions			%	Male	Female	Total	%
		Male	Female	Total		Male	Female	Total					
City of Edmonton .....	1	471	302	773	63.9	554	340	894	66.5	1,025	642	1,667	65.2
City of Calgary .....	2	15	4	19	1.6	3	—	3	0.2	18	4	22	0.9
City of Lethbridge .....	3	1	—	1	0.1	—	1	1	0.1	1	1	2	0.1
Banff National Park .....	4	—	—	—	—	1	—	1	0.1	1	—	1	0.1
Jasper National Park .....	5	2	3	5	0.4	—	1	1	0.1	2	4	6	0.2
Alberta East Central Health Unit .....	6	6	1	7	0.6	8	4	12	0.9	14	5	19	0.7
Athabasca Health Unit .....	7	9	9	18	1.5	9	9	18	1.3	18	18	36	1.4
Barons-Eureka Health Unit .....	8	—	—	—	—	—	—	—	—	—	—	—	—
Big Country Health Unit .....	9	1	—	1	0.1	—	—	—	—	1	—	1	0.1
Chief Mountain Health Unit .....	10	1	—	1	0.1	—	—	—	—	1	—	1	0.1
Chinook Health Unit .....	11	—	1	1	0.1	1	—	1	0.1	1	1	2	0.1
County of Warner Health Unit .....	12	—	—	—	—	—	—	—	—	—	—	—	—
Drumheller Health Unit .....	13	—	—	—	—	3	2	5	0.4	3	2	5	0.2
Edson Health Unit .....	14	8	4	12	1.0	8	7	15	1.1	16	11	27	1.1
Foothills Health Unit .....	15	1	—	1	0.1	—	—	—	—	1	—	1	0.1
Grande Prairie Health Unit .....	16	16	5	21	1.7	18	16	34	2.5	34	21	55	2.1
Leduc-Strathcona Health Unit .....	17	15	15	30	2.5	29	18	47	3.5	44	33	77	3.0
Medicine Hat Health Unit .....	18	3	—	3	0.2	2	—	2	0.1	5	—	5	0.2
Minburn-Vermilion Health Unit .....	19	6	3	9	0.7	11	10	21	1.6	17	13	30	1.1
Mount View Health Unit .....	20	—	—	—	—	—	—	—	—	—	—	—	—
North Eastern Alberta Health Unit .....	21	12	14	26	2.1	23	15	38	2.8	35	29	64	2.5
Peace River Health Unit .....	22	11	13	24	2.0	11	16	27	2.0	22	29	51	2.0
Red Deer Health Unit .....	23	5	2	7	0.6	4	4	8	0.6	9	6	15	0.6
Stony Plain-Lac Ste. Anne Health Unit .....	24	24	12	36	3.0	11	17	28	2.1	35	29	64	2.5
Sturgeon Health Unit .....	25	18	11	29	2.4	20	19	39	2.9	38	30	68	2.6
Vegreville Health Unit .....	26	10	6	16	1.3	13	8	21	1.6	23	14	37	1.4
Wetoka Health Unit .....	27	6	4	10	0.8	3	2	5	0.4	9	6	15	0.6
Northern Alberta Health Services .....	28	7	2	9	0.7	8	3	11	0.8	15	5	20	0.8
Municipalities not in Health Units .....	29	1	—	1	0.1	1	2	3	0.2	2	2	4	0.1
Indian Reserves .....	30	—	1	1	0.1	—	—	—	—	—	1	1	0.1
Other Provinces .....	31	37	10	47	3.9	17	5	22	1.6	54	15	69	2.7
Territories .....	32	30	19	49	4.1	14	4	18	1.3	44	23	67	2.6
Outside Canada .....	33	—	—	—	—	—	—	—	—	—	—	—	—
No Fixed Abode .....	34	46	6	52	4.3	58	12	70	5.2	104	18	122	4.8
TOTAL .....		762	447	1,209	100.0	830	515	1,345	100.0	1,592	962	2,554	100.0

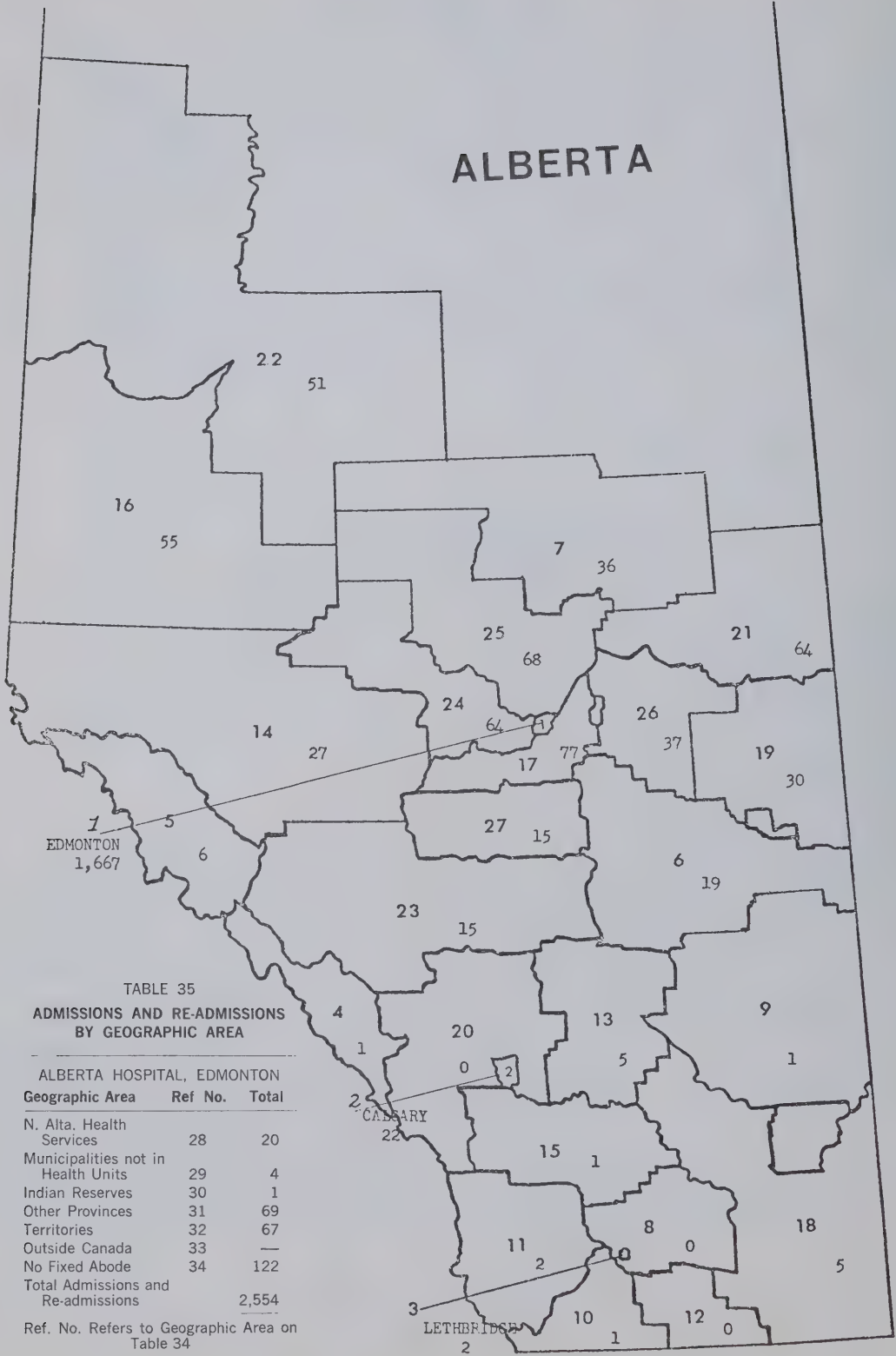




TABLE 36  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ALBERTA HOSPITAL, EDMONTON

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	34	60	94	9.5
291	Alcoholic Psychosis .....	15	2	17	1.7
292	Psychosis Associated with Intracranial Infection .....	3	3	6	0.6
293	Psychosis Associated with Other Cerebral Condition .....	64	37	101	10.2
294	Psychosis Associated with Other Physical Conditions .....	4	2	6	0.6
295	Schizophrenia .....	282	159	441	44.5
296	Affective Psychoses .....	18	30	48	4.9
297	Paranoid States .....	9	6	15	1.5
298	Other Psychoses .....	1	—	1	0.1
299	Unspecified Psychoses .....	3	1	4	0.4
300	Neuroses .....	23	20	43	4.3
301	Personality Disorders .....	24	17	41	4.1
302	Sexual Deviation .....	2	—	2	0.2
303	Alcoholism .....	41	10	51	5.2
304	Drug Dependence .....	4	2	6	0.6
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	6	8	14	1.4
308	Behaviour Disorders of Childhood .....	4	2	6	0.6
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	6	11	17	1.7
310-					
315	Mental Retardation .....	32	25	57	5.8
345	Epilepsy .....	9	7	16	1.6
793	Observation Without Need for Further Medical Care .....	4	1	5	0.5
TOTALS		588	403	991	100.0

TABLE 37  
DISCHARGES BY PSYCHIATRIC DIAGNOSIS AND CLINICAL PROGRESS  
ALBERTA HOSPITAL, EDMONTON

Diagnostic Classification	Improved				Unimproved				Recovered				Total			
	M	F	T	%	M	F	T	%	M	F	T	%	M	F	T	%
Senile and Presenile Dementia .....	27	20	47	2.3	7	6	13	3.1	2	1	3	2.1	36	27	63	2.5
Alcoholic Psychosis .....	24	11	35	1.7	1	1	2	0.5	19	—	19	13.4	44	12	56	2.2
Psychosis Associated with Intracranial Infection .....	1	1	2	0.1	2	2	4	1.0	—	—	—	—	3	3	6	0.2
Psychosis Associated with Other Cerebral Condition .....	28	12	40	2.0	14	2	16	3.9	—	—	—	—	42	14	56	2.2
Psychosis Associated with Other Physical Conditions .....	15	14	29	1.5	7	1	8	1.9	2	—	2	1.4	24	15	39	1.5
Schizophrenia .....	346	298	644	32.1	31	19	50	12.0	39	14	53	37.3	416	331	747	29.1
Affective Psychoses .....	42	92	134	6.7	2	5	7	1.7	1	2	3	2.1	45	99	144	5.6
Paranoid States .....	5	5	10	0.5	2	1	3	0.7	1	—	1	0.7	8	6	14	0.5
Other Psychoses .....	1	2	3	0.1	—	—	—	—	—	—	—	—	1	2	3	0.1
Unspecified Psychoses .....	—	—	—	—	3	—	3	0.7	—	—	—	—	3	—	3	0.1
Neuroses .....	124	127	251	12.5	17	13	30	7.2	20	4	24	16.9	161	144	305	11.9
Personality Disorders .....	130	80	210	10.5	96	19	115	27.7	6	3	9	6.4	232	102	334	13.0
Sexual Deviation .....	5	—	5	0.2	8	—	8	1.9	—	—	—	—	13	—	13	0.5
Alcoholism .....	324	62	386	19.2	53	7	60	14.5	12	—	12	8.5	389	69	458	17.9
Drug Dependence .....	23	11	34	1.7	8	8	16	3.9	5	—	5	3.5	36	19	55	2.1
Physical Disorders of Presumably Psychogenic Origin .....	1	—	1	0.1	—	—	—	—	—	—	—	—	1	—	1	0.1
Special Symptoms not Elsewhere Classified .....	1	—	1	0.1	—	—	—	—	—	—	—	—	1	—	1	0.1
Transient Situational Disturbances .....	18	22	40	2.0	13	12	25	6.0	1	5	6	4.2	32	39	71	2.8
Behaviour Disorders of Childhood .....	14	3	17	0.8	10	2	12	2.9	—	—	—	—	24	5	29	1.1
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	7	4	11	0.6	3	—	3	0.7	1	—	1	0.7	11	4	15	0.6
Mental Retardation .....	33	32	65	3.2	18	6	24	5.8	—	4	4	2.8	51	42	93	3.6
Epilepsy .....	21	13	34	1.7	2	—	2	0.5	—	—	—	—	23	13	36	1.4
Observation Without Need for Further Medical Care .....	5	3	8	0.4	11	3	14	3.4	—	—	—	—	16	6	22	0.9
TOTAL	1,195	812	2,007	100.0	308	107	415	100.0	109	33	142	100.0	1,612	952	2,564	100.0
PER CENT OF TOTAL	46.6	31.7	78.3		12.0	4.1	16.1		4.3	1.3	5.6		62.9	37.1		100.0



TABLE 39

TREATMENT SUMMARY OF DISCHARGED PATIENTS  
ALBERTA HOSPITAL, EDMONTON

Kind of Treatment	Number of Patients Receiving These Kinds of Treatment		
	Male	Female	Total
Drugs .....	1,468	908	2,376
Electrotherapy .....	124	153	277
Individual Psychotherapy .....	1,508	920	2,428
Group Therapy .....	932	583	1,515
Other .....	295	158	453
TOTALS .....	4,327	2,722	7,049

TABLE 40

CAUSES OF DEATH  
(ICDA-8)  
ALBERTA HOSPITAL, EDMONTON

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	—	—	—
Neoplasms .....	6	1	7
Endocrine, Nutritional and Metabolic Diseases .....	1	1	2
Diseases of the Nervous System and Sense Organs .....	3	—	3
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	3	—	3
Diseases of the Circulatory System .....	16	10	26
Diseases of the Respiratory System .....	7	3	10
Diseases of the Digestive System .....	1	—	1
Diseases of the Genitourinary System .....	—	—	—
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	—	—
Symptoms and Ill-Defined Conditions .....	1	—	1
Accidents, Poisoning and Violence* .....	5	1	6
Diseases of the Musculo-skeletal System .....	—	—	—
TOTAL .....	43	16	59

\*Suicides

TABLE 41

AGES AT DEATH  
ALBERTA HOSPITAL, EDMONTON

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	—	—	—
30 - 39 .....	1	—	1
40 - 49 .....	2	—	2
50 - 59 .....	6	—	6
60 - 69 .....	11	—	11
70 - 79 .....	11	7	18
80 - 89 .....	11	6	17
90 - 99 .....	1	3	4
100 and over .....	—	—	—
TOTAL .....	43	16	59

TABLE 42

DEATHS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, EDMONTON

Diagnostic Classification	Male	Female	Total
Senile and Presenile Dementia .....	18	5	23
Alcoholic Psychosis .....	4	—	4
Psychosis Associated with Intracranial Infection .....	1	—	1
Psychosis Associated with Other Cerebral Condition .....	4	9	13
Psychosis Associated with Other Physical Conditions .....	—	—	—
Schizophrenia .....	9	1	10
Affective Psychoses .....	—	1	1
Paranoid States .....	2	—	2
Other Psychoses .....	—	—	—
Unspecified Psychoses .....	—	—	—
Neuroses .....	—	—	—
Personality Disorders .....	—	—	—
Sexual Deviation .....	—	—	—
Alcoholism .....	2	—	2
Drug Dependence .....	—	—	—
Physical Disorders of Presumably Psychogenic Origin .....	—	—	—
Special Symptoms not Elsewhere Classified .....	—	—	—
Transient Situational Disturbances .....	—	—	—
Behaviour Disorders of Childhood .....	—	—	—
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	2	—	2
Mental Retardation .....	—	—	—
Epilepsy .....	1	—	1
Observation Without Need for Further Medical Care .....	—	—	—
TOTALS .....	43	16	59



# CONTINUED TREATMENT HOSPITALS

**ALBERTA HOSPITAL, CLARESHOLM**  
**ALBERTA HOSPITAL, RAYMOND**  
**ROSEHAVEN, CAMROSE**

Rehabilitation programs have become increasingly active at the Alberta Hospital, Claresholm, as well as occupational and recreational programs which are now under the direction of professional workers.

The Alberta Hospital, Raymond, continued to serve a group of female patients with chronic mental disorders.

Rosehaven, Camrose, continued to be characterized by the great age of the patients and the nursing home atmosphere.

## **ALBERTA HOSPITAL, CLARESHOLM**

**A. R. Schrag, M.D., C.R.C.P.(C),**  
**Medical Superintendent to September 30**  
**F. J. Edwards, M.D., C.M., C.R.C.P.(C),**  
**Medical Superintendent from October 1**

### **MOVEMENT OF POPULATION**

There were 440 patients, 171 men and 269 women, on the books December 31, 1969. The number of patients on books December 31, 1970, was 399, 156 men and 243 women, a decrease of 41 patients over the previous year. There were six patients on leave at the end of the year.

#### **Admission of Patients**

Thirteen patients, four men and nine women, were admitted from other hospitals within the Division; five first admissions, six re-admissions and two transfers. Eleven of these patients were admitted by voluntary status and two by certificate. Of the number admitted seven were from Alberta Hospital, Edmonton, three men and four women; six were from Alberta Hospital, Ponoka, one man and five women.

There were 11 renewal certificates completed on behalf of six patients. One patient's form of admission was changed from voluntary to detention certificate. Another patient's form of admission was changed from renewal certificate to voluntary.

#### **Separation of Patients**

Separations numbered 54, 11 patients, six men and five women were discharged to Alberta Hospital, Edmonton; 13 patients, one man and 12 women were discharged to Alberta Hospital, Ponoka; 15 patients, six men and nine women, were discharged to the care of relatives, Holy Cross Hospital, Calgary, and Nursing Homes in Alberta. There were 15 deaths, six males and nine females.

### **GENERAL HEALTH OF PATIENTS**

The general health of the patients was good. There were eight accidents which resulted in six fractures and two lacerations. There were no suicides, and no major epidemics. Immunization programs were carried out as directed.

### **CLINICAL WORK**

A rehabilitation program was planned, and was carried out under the direction of the social worker with the assistance of a ward aide and attendant. This

consisted of eight weeks of group therapy, involving four male and four female patients.

The program was repeated with a second group of patients and resulted in the discharge of seven patients, and improvement in the remaining nine patients.

The medical staff was increased to four part-time physicians from the Town of Claresholm who provided daily visits on a rotating basis. Regular meetings were established between the medical staff and nursing administration; these meetings were frequently attended by the Director of Mental Health and his Assistant.

The dentist from the Alberta Hospital, Ponoka, visited in May and November to provide dental care. Emergency cases were treated by the local dentist.

Out-of-hospital clinical services were increased. Eighteen patients were transferred to the municipal hospital for the treatment of acute physical conditions, and minor surgery. Twelve patients were transferred to general hospitals in Calgary for major surgery, and 25 patients were referred to clinics in Calgary.

Many patients saw the local optometrist and obtained new glasses when required.

Two patients had cataracts removed by ophthalmologists in Calgary.

Two autopsies were performed in cases where the causes of death were doubtful.

Municipal Hospital out-patient services for our patients included 87 X-Rays, 282 laboratory tests, and 19 electrocardiograms.

Seven patients received physiotherapy treatments at the Willow Creek Auxiliary Hospital.

### **Nursing Services**

A good standard of nursing care was maintained and staff was upgraded by the recruitment of professional staff to fill vacant positions.

Regular in-service training classes were established on the geriatric ward, which resulted in improved geriatric care.

### **Occupational Therapy**

Thirty-five to 50 female patients were involved daily in arts and crafts programs in MacLean Hall, and 15 to 20 men in the woodworking shop.

Craft rooms on two female wards also had active programs involving about 30 ladies each day and craft rooms were established on two male wards, each involving 10 to 15 patients.

A patient training program was commenced. Skills, such as typing and telephone answering, were taught, such skills to be utilized within the hospital.

### **Social Service Department**

Until the services of a recreational therapist and an occupational therapist were obtained, the social worker undertook co-ordination of patient activities. After their employment, he acted in an advisory capacity to both therapists.

Other projects undertaken by the social worker were: organization of a volunteer program, establish-

ment of a snack bar, and organization and direction of a rehabilitation program. Photographs of all patients were obtained to use on file cards. Guidance was given to Alberta Service Corps workers throughout their four months' stay here, and liaison maintained with their supervisor.

Placement was arranged for 14 patients, with relatives, in nursing homes, and for one patient at the Canadian National Institute for the Blind. The social worker maintained contact with those patients placed in the Calgary area. Liaison was maintained with the Alberta Hospital, Ponoka, Out-Patient Department (Foothills Hospital), the Calgary Rehabilitation Society, Advance Industries, the Department of Social Development, and Calgary and Lethbridge Canadian Mental Health Associations.

### RECREATIONAL PROGRAMS

A recreational therapist was employed in September. Since that time the program expanded considerably. Activities included camping and picnics (10 to 40 patients), trips to shopping centres, rodeos and stampedes, Christmas lighting displays, et cetera (up to 40 patients), swimming (30 patients), skating (40 patients), bowling (130 patients), curling (40 patients), dances (50 patients), bingos (40 patients), ball games (30 patients), pet shows (100 patients), and indoor games.

#### Library

This consisted of approximately 1,500 books. A project, involving patients in re-cataloguing, filing and repairing, was commenced.

A male patient was appointed as librarian.

#### Religious Programs

Religious services were conducted each week by local clergy, on a rotating basis.

### FIRE PROTECTION

Fire prevention, orientation lectures, and drills were carried out at regular intervals. All fire fighting and prevention equipment was checked and tested as per the written fire safety regulations.

### HOUSEKEEPING

The housekeeping staff was depleted by one female and one male. This service operated as efficiently as possible under these circumstances.

### LAUNDRY AND LINEN REPAIR SERVICES

The Laundry continued to function adequately. Total poundage was estimated at 779,400 pounds, which was well within the rated capacity for a laundry of this size.

The Linen Repair Room continued to operate under the direction of the Laundry.

### DIETARY

A high quality of food service continued to be available to our patient population. The five week rotational menu system continued to function well, providing a good selection of food.

The cook apprenticeship program continued to function well, with three kitchen helpers taking the first-year course towards their Journeyman Cook's Certificate.

There were a number of special diets, consisting of Diabetic, Gastric, Restricted Fat, and Salt.

The Staff Cafeteria was well frequented during the year.

Satisfactory dietary consultative service from a part-time dietitian continued.

### EDUCATIONAL PROGRAMS

Orientation classes were given to 47 aides and attendants, and one occupational therapy aide. Further ward training was provided co-operatively by the nursing instructor and ward charges.

In-service programs included general nutrition and dietary lectures given to ward and kitchen staff by the dietitian, one doctor's lecture, two lectures by a pharmacist, and discussion groups.

Plans were completed to introduce an improved in-service program in January, 1971.

Out-of-hospital educational programs attended by hospital staff included six workshops and seminars. These were attended by a total of 25 staff. One graduate nurse successfully completed the 1969-70 Nursing Unit Administration Course, and one graduate nurse commenced the 1970-71 course. The housekeeping supervisor successfully completed a 10-day course on Institutional Housekeeping sponsored by the Alberta Hospital Association. One occupational therapy aide successfully completed the Activity Aides Training Course at the University of Alberta, Department of Occupational Therapy.

### BUSINESS ADMINISTRATION

The Business Office continued to provide efficient and satisfactory service during the year. All areas of personnel, budgeting, goods and services, and all other accounting and business functions were adequately covered.

The usual business, personnel, purchasing and accounting functions, were carried out for the Alberta Hospital, Raymond, in a satisfactory manner. Close liaison and co-operation was maintained with all departments.

### GARDENS AND GROUNDS

Gardens and grounds were maintained and improved by the Public Works Staff.

Landscaping was completed around MacLean Hall, and the underground watering system was further extended.

Paving and alterations to parking areas was completed, with the exception of plug-in service.

### NEW CONSTRUCTION AND RENOVATIONS

All general maintenance repairs and minor alterations were carried out promptly in a satisfactory fashion. Approximately \$21,000.00 was spent on paving, parking areas, sidewalks, lighting, site development, landscaping and lawns.

### VISITORS

The Director and Assistant Director of Mental Health visited several times, and attended six medical staff/nursing administration meetings.

Representatives of the Recreation Branch of the Department of Youth, Mr. G. Hughes, and Miss B.

Hunt, visited in February, and investigated the recreational program and facilities.

Mr. H. Neufeld, Pharmacist from Alberta Hospital, Ponoka, visited in February, at this hospital's request, and gave useful information and advice pertaining to pharmaceutical supplies and administration of medications.

Miss E. Perdue, Provincial Nutritionist, visited in October and made recommendations.

Mr. Don Axford, Supervisor of Alberta Service Corps, visited in April and explained the Alberta Service Corps program.

Sister Ann Marie Cummins, Director, School of Nursing, Lethbridge Community College, toured the hospital in September.

A joint meeting of the Calgary and Lethbridge Mental Health Planning Councils was held in MacLean Hall in June, under the direction of Dr. S. Angus, and Dr. K. Pearce.

Representatives of Calgary and Lethbridge Canadian Mental Health Association visited.

Fifty-five psychology 20 students from Claresholm, High River and Lethbridge, toured the facilities.

## DEPARTMENT OF PUBLIC WORKS

All buildings continued well maintained with no major problems. The Mechanical Branch maintained its usual high standard of service.

## MISCELLANEOUS

One female ward, Claremont, became an open ward in July, and one male ward, Southolm, became an open ward in August. There were no problems.

Following the retirement of Miss A. M. Hill, R.N., in February, after long and devoted service, Mrs. J. A. McDonald, R.N., was appointed Director of Nursing.

One male and one female Alberta Service Corps workers were resident here for four months, from May to August. These young people were well accepted by patients and staff, and were a definite asset.

The canteen functioned well. A "snack bar" was opened in MacLean Hall and operated by patients.

## CONCLUSION

There was a steady decrease of patient population, due to decreased admissions, and increased discharges.

Patients discharged to nursing homes and relatives were given six weeks' trial leave of absence before their discharge was finalized. One patient returned from her son's care, due to unsatisfactory family conditions.

With the addition of an occupational therapist and a recreational therapist, there was an increase in patient projects and activities, which added a great deal to patient care and improved patient morale.

Staff morale remained at a good level.

TABLE 43  
MOVEMENT OF PATIENT POPULATION  
ALBERTA HOSPITAL, CLARESHOLM

ADMISSIONS:				M	F	T	M	F	T
First Admissions:									
Voluntary .....	2	3	5						
Two Medical Certificates .....	—	—	—						
Urgent Medical Certificate .....	—	—	—						
Warrant for Examination .....	—	—	—						
Warrant TB Act .....	—	—	—						
From NWT .....	—	—	—						
Remand for Observation .....	—	—	—						
Detention under Sec. 527, CCC .....	—	—	—						
From Gaol under M.H.A. ....	—	—	—						
From Penitentiary .....	—	—	—						
	2	3	5				2	3	5
Re-Admissions:									
Voluntary .....	1	5	6						
Two Medical Certificates .....	—	—	—						
Urgent Medical Certificate .....	—	—	—						
Warrant for Examination .....	—	—	—						
Warrant TB Act .....	—	—	—						
From NWT .....	—	—	—						
Remand for Observation .....	—	—	—						
Detention under Sec. 527, CCC .....	—	—	—						
From Gaol under M.H.A. ....	—	—	—						
From Penitentiary .....	—	—	—						
	1	5	6				1	5	6
Transfers In .....									
							1	1	2
ADMISSION TOTALS .....									
							4	9	13
SEPARATIONS:									
Clinical Progress	M	F	T	Type of Separation	M	F	T		
Recovered .....	—	—	—	Direct Discharge .....	8	18	26		
Improved .....	1	—	1	Discharge from Leave....	5	8	13		
Unimproved .....	12	26	38	Discharge from	—	—	—		
Died .....	6	9	15	Unauthorized Leave ....	—	—	—		
TOTAL .....	19	35	54	Deportation .....	—	—	—		
				Transfer Out .....	—	—	—		
				Death .....	6	9	15		
				TOTAL .....	19	35	54		
SEPARATION TOTALS .....									
					19	35	54		
Patients on Books, December 31, 1969 .....									
					171	269	440		
Patients on Books, December 31, 1970 .....									
					156	243	399		
Patients in Residence, December 31, 1970 .....									
					154	239	393		
Patients on Leave or Otherwise Absent, December 31, 1970 .....									
					2	4	6		



TABLE 44

PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ALBERTA HOSPITAL, CLARESHOLM

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia ....	1	10	11	2.8
291	Alcoholic Psychosis .....	4	10	14	3.4
292	Psychosis Associated with Intracranial Infection .....	2	4	6	1.5
293	Psychosis Associated with Other Cerebral Condition .....	5	6	11	2.8
294	Psychosis Associated with Other Physical Conditions .....	135	152	287	71.9
295	Schizophrenia .....	4	23	27	6.8
296	Affective Psychoses .....	1	10	11	2.8
297	Paranoid States .....	—	—	—	—
298	Other Psychoses .....	1	8	9	2.3
299	Unspecified Psychoses .....	—	2	2	0.5
300	Neuroses .....	—	—	—	—
301	Personality Disorders .....	—	—	—	—
302	Sexual Deviation .....	—	—	—	—
303	Alcoholism .....	—	—	—	—
304	Drug Dependence .....	—	—	—	—
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	—	—	—	—
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	6	6	1.5
310-	Mental Retardation .....	3	11	14	3.4
345	Epilepsy .....	—	1	1	0.3
793	Observation Without Need for Further Medical Care .....	—	—	—	—
	TOTALS .....	156	243	399	100.0

TABLE 45

AGE OF PATIENTS ON ADMISSION  
ALBERTA HOSPITAL, CLARESHOLM

Ages	First Admissions			Readmissions			Transfers			Total			%
	M	F	T	M	F	T	M	F	T	M	F	T	
Under 15 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
15 to 19 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
20 to 24 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
25 to 29 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
30 to 34 years .....	1	—	1	—	—	—	—	—	—	1	—	1	7.7
35 to 39 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
40 to 44 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
45 to 49 years .....	—	—	—	—	—	—	1	—	1	1	—	1	7.7
50 to 54 years .....	—	—	—	—	2	2	—	—	—	—	2	2	15.4
55 to 59 years .....	—	1	1	—	2	2	—	—	—	3	3	3	23.0
60 to 64 years .....	—	—	—	—	1	1	—	—	—	—	1	1	7.7
65 to 69 years .....	1	—	1	—	—	—	—	—	—	1	—	1	7.7
70 and over .....	—	2	2	1	—	1	—	1	1	1	3	4	30.8
TOTALS .....	2	3	5	1	5	6	1	1	2	4	9	13	100.0

TABLE 46

CAUSES OF DEATH  
(ICDA-8)  
ALBERTA HOSPITAL, CLARESHOLM

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	—	—	—
Neoplasms .....	2	2	4
Endocrine, Nutritional and Metabolic Diseases .....	—	1	1
Diseases of the Nervous System and Sense Organs .....	—	—	—
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	4	4	8
Diseases of the Respiratory System .....	—	—	—
Diseases of the Digestive System .....	—	1	1
Diseases of the Genitourinary System .....	—	—	—
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	—	—
Symptoms and Ill-Defined Conditions...	—	1	1
Accidents, Poisoning and Violence .....	—	—	—
Diseases of the Musculo-skeletal System .....	—	—	—
TOTAL .....	6	9	15

TABLE 47

AGES AT DEATH  
ALBERTA HOSPITAL, CLARESHOLM

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	—	—	—
30 - 39 .....	—	—	—
40 - 49 .....	—	—	—
50 - 59 .....	—	—	—
60 - 69 .....	3	4	7
70 - 79 .....	2	3	5
80 - 89 .....	1	1	2
90 - 99 .....	—	1	1
100 and over .....	—	—	—
TOTAL .....	6	9	15

TABLE 48  
DEATHS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, CLARESHOLM

Diagnostic Classification	Male	Female	Total
Senile and Presenile Dementia .....	1	—	1
Alcoholic Psychosis .....	—	—	—
Psychosis Associated with Intracranial Infection .....	—	1	1
Psychosis Associated with Other Cerebral Condition .....	—	—	—
Psychosis Associated with Other Physical Conditions .....	—	—	—
Schizophrenia .....	5	6	11
Affective Psychoses .....	—	2	2
Paranoid States .....	—	—	—
Other Psychoses .....	—	—	—
Unspecified Psychoses .....	—	—	—
Neuroses .....	—	—	—
Personality Disorders .....	—	—	—
Sexual Deviation .....	—	—	—
Alcoholism .....	—	—	—
Drug Dependence .....	—	—	—
Physical Disorders of Presumably Psychogenic Origin .....	—	—	—
Special Symptoms not Elsewhere Classified .....	—	—	—
Transient Situational Disturbances .....	—	—	—
Behaviour Disorders of Childhood .....	—	—	—
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	—	—
Mental Retardation .....	—	—	—
Epilepsy .....	—	—	—
Observation Without Need for Further Medical Care .....	—	—	—
TOTALS .....	6	9	15

### ALBERTA HOSPITAL, RAYMOND

A. R. Schrag, M.D., C.R.C.P.(C),  
Medical Superintendent to September 30

F. J. Edwards, M.D., C.M., C.R.C.P.(C),  
Medical Superintendent from October 1

### MOVEMENT OF POPULATION

On December 31, 1969, there were 77 female patients on the books and on December 31, 1970, there were 76, the only separation being a death. Patients in residence December 31, 1970, were 73, three being on holiday leave. All patients on the books were of Voluntary Status.

### GENERAL HEALTH OF PATIENTS

There were no suicides. Two patients fell, each sustaining a fracture of the surgical neck of the left femur. Follow-up chest X-Rays were done where indicated and in March all patients and staff were given a Typhoid-paratyphoid Vaccine booster inoculation. In December several staff and patients contracted influenza which caused heavy chest colds. The general health of the patients was satisfactory with all but one patient ambulatory and active.

### CLINICAL WORK

Four part-time physicians from the Town of Raymond were on call. Necessary X-Ray and laboratory work was done at the doctor's clinic, the Raymond General Hospital or St. Michael's and Municipal Hospitals, Lethbridge. Surgery was performed on three patients, one having a cataract removed from her right eye and the other two having their left hips pinned as a result of fractures. Laboratory tests were done twice during the year for Salmonellosis for patients and staff handling food. No organisms were found.

The dentist from Alberta Hospital, Ponoka, made spring and fall visits doing the necessary work on

patients' natural teeth and dentures. Emergency dental work was done by the local dentist.

Patients who required prescription eyeglasses, were taken to an optometrist in Lethbridge.

### Occupational and Industrial Therapy

Daily morning and afternoon classes were held in the Occupational Parlor for those patients interested in embroidery, weaving, knitting, crocheting, quilting, mending or painting. Various hospital services provided steady or part-time occupation for approximately 50 patients, 16 in the kitchen and dining hall, 10 in the laundry, three in the sewing room and 20 in the wards and dormitories. In all of these departments, afternoon tea was served.

### RECREATIONAL PROGRAMS

A piano, T.V. and radio were provided in the main building and Annex sitting rooms, a T.V. and radio in the occupational parlor and a radio in all other departments. A record player was provided for dancing, parties and special Church Services.

The library was situated in the Occupational Parlor which also served as a reading room. The Raymond Public Library donated many fine books and bound volumes of magazines. Current issues of magazines and newspapers were subscribed to.

The Lethbridge Mental Health Association was very active providing a birthday party with cake and gifts each month. It also instigated a program of hand-crafts consisting of macaroni craft, shadow art, et cetera. The young people brought various musical instruments and entertained with impromptu concerts, dancing and sing songs. These young people were especially enjoyed by the Mothers and Grandmothers.

The weekly presentation of picture shows continued to provide enjoyment and interest for approximately 65 patients. Dances and Bingo parties celebrated special occasions throughout the year, and during the summer months picnics were held on the lawns.

The Raymond Music Club brought their 26th annual Christmas Concert with Santa and treats which was the thrill of the Christmas Season. Several groups of young people brought plays and musical concerts and visited with the patients. Such visits did much to break down the shyness that was evident whenever strangers visited the hospital. The Catholic Women's League brought several Bingo parties throughout the year, and another local family brought colored slides of their trips abroad — Hawaii, et cetera. These were especially enjoyable evenings.

Gifts of clothing, cosmetics, jewellery, records, fruit, candy and cookies were received from the Jefferson U.F.W.A., Major Jack Ross Chapter I.O.D.E., the Quota Club, the Unitarian Service Committee and United Church and Farm Women's groups of Raymond, Magrath, Warner, Taber, Hays, Milk River, Kipp, New Dayton and Lethbridge.

An equipped beauty parlor was available to the patients; permanent waves were given in the spring and fall.

United Church and Catholic Services were held at the hospital once each month. The Priests, United Church Minister and Mormon Bishops gave freely of their time whenever a request was made.

### **FIRE PROTECTION**

There were no fires. Fire drills were held regularly throughout the summer months and all fire equipment checked weekly.

### **DIETARY**

The Provincial Nutritionist, Department of Health, spent two days in the dietary department reviewing menus and routines, and made several valuable suggestions which were initiated. The head Chef of Alberta Hospital, Claresholm, made two visits during the year informing the cooks of available and tested brands of products to add more variety to the meals.

### **BUSINESS ADMINISTRATION**

There was excellent liaison between the Business Manager at the Alberta Hospital, Claresholm, and the Alberta Hospital, Raymond. Personnel from the Alberta Hospital, Claresholm, Stores, Laundry, Dietary, Auditing and Personnel departments, made visits through the year and their comments and instruction were much appreciated.

There were two staff changes of note. The Director of the Division of Mental Health, our Medical Superintendent, retired in September and, at the local level, the Assistant Director of Nursing retired after approximately 35 years in Government service.

### **GARDENS AND GROUNDS**

The wards and dayrooms were seldom without fresh cut-flower bouquets which greatly pleased those unable to be outdoors. The lawns and flowerbeds were a beautiful sight and a point of interest for visitors to the town as well as those who visited the patients.

There was a good variety of fresh vegetables from the garden all summer and the fall harvest was abundant, filling both root cellars. This was ample for our winter requirements and spring planting of potatoes.

### **NEW CONSTRUCTION AND RENOVATION**

Drop ceilings were built into both stairwells that eliminated frost damage to the ceilings during the winter. The refrigerator was given a new tile floor

making it more easily cleaned and sanitized. Forced air heating units replaced the cast radiators in the storeroom and shower room, which greatly helped to control the dampness in these rooms. In the laundry, a new rubber tile floor was laid in the sitting room, the cast radiation replaced with convector radiators, the old incandescent drop lights replaced with fluorescent fixtures and the electrical wiring was renewed throughout the building.

In the main building the three dormitories, the stairwells and all bathrooms were painted as well as the shower room and dormitory in the Annex. New window drapes were hung making the rooms bright, clean and cheery. Stair treads were refinished as necessary.

### **VISITORS**

The Director and Assistant Director, Division of Mental Health, made several visits of inspection and instruction and their guidance was very much appreciated. The heads of the Personnel, Purchasing, Audit and Accounting departments visited keeping the staff informed of new developments in their respective fields. Periodic visits of inspection were made by members of the Public Works, Electrical, Boiler and Fire departments.

The Business Manager from Alberta Hospital, Claresholm, visited at least once a month and frequently brought heads of departments from that hospital to offer assistance where required by this staff. This close co-operation and consideration was invaluable.

### **PUBLIC WORKS**

The Department of Public Works was most attentive to our needs and senior personnel of the electrical, plumbing, carpentry, painting and maintenance departments inspected the premises making valuable suggestions. The Lethbridge branch was most co-operative and responded quickly with men and materials upon request from the local maintenance men. Daily maintenance was adequate and the hospital buildings and machinery kept in good repair.

### **CONCLUSION**

There were no acute problems with the patients, their general health was good and medical supplies adequate.



## DEPARTMENT OF HEALTH

TABLE 49  
MOVEMENT OF PATIENT POPULATION  
ALBERTA HOSPITAL, RAYMOND

ADMISSIONS:				M	F	T	M	F	T
First Admissions:									
Voluntary .....				—	—	—			
Two Medical Certificates .....				—	—	—			
Urgent Medical Certificate .....				—	—	—			
Warrant for Examination .....				—	—	—			
Remand for Observation .....				—	—	—			
Detention under Sec. 527, CCC .....				—	—	—			
From Gaol under M.H.A. ....				—	—	—			
From Penitentiary .....				—	—	—			
TOTAL .....							—	—	—
Re-Admissions:									
Voluntary .....				—	—	—			
Two Medical Certificates .....				—	—	—			
Urgent Medical Certificate .....				—	—	—			
Warrant for Examination .....				—	—	—			
Remand for Observation .....				—	—	—			
Detention under Sec. 527, CCC .....				—	—	—			
From Gaol under M.H.A. ....				—	—	—			
From Penitentiary .....				—	—	—			
TOTAL .....							—	—	—
Transfer In .....							—	—	—
ADMISSION TOTALS .....							—	—	—
SEPARATIONS									
Clinical Progress	M	F	T	Type of Separation			M	F	T
Recovered .....	—	—	—	Direct Discharge .....			—	—	—
Improved .....	—	—	—	Discharge from Leave .....			—	—	—
Unimproved .....	—	—	—	Discharge from .....			—	—	—
Died .....	—	1	1	Unauthorized Leave .....			—	—	—
TOTAL .....	—	1	1	Deportation .....			—	—	—
				Transfer Out .....			—	—	—
				Death .....			—	1	1
				TOTAL .....			—	1	1
SEPARATION TOTALS .....							—	1	1
Patients on Books, December 31, 1969 .....							—	77	77
Patients on Books, December 31, 1970 .....							—	76	76
Patients in Residence, December 31, 1970 .....							—	73	73
Patients on Leave or Otherwise Absent, December 31, 1970 .....							—	3	3

TABLE 50  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ALBERTA HOSPITAL, RAYMOND

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	—	3	3	3.9
291	Alcoholic Psychosis .....	—	1	1	1.3
292	Psychosis Associated with Intracranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	—	2	2	2.6
294	Psychosis Associated with Other Physical Conditions .....	—	1	1	1.3
295	Schizophrenia .....	—	54	54	71.4
296	Affective Psychoses .....	—	5	5	6.5
297	Paranoid States .....	—	2	2	2.6
298	Other Psychoses .....	—	—	—	—
299	Unspecified Psychoses .....	—	—	—	—
300	Neuroses .....	—	—	—	—
301	Personality Disorders .....	—	—	—	—
302	Sexual Deviation .....	—	—	—	—
303	Alcoholism .....	—	1	1	1.3
304	Drug Dependence .....	—	—	—	—
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	—	—	—	—
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	2	2	2.6
310-	Mental Retardation .....	—	4	4	5.2
315	Epilepsy .....	—	1	1	1.3
345	Observation Without Need for Further Medical Care .....	—	—	—	—
793	TOTALS .....	—	76	76	100.0

TABLE 51  
AGE OF PATIENTS ON ADMISSION  
ALBERTA HOSPITAL, RAYMOND

No admissions in 1970.

TABLE 52  
CAUSES OF DEATH  
(ICDA-8)  
ALBERTA HOSPITAL, RAYMOND

Disease	Male	Female	Total
Infective and Parasitic Disease .....	—	—	—
Neoplasms .....	—	—	—
Endocrine, Nutritional and Metabolic Diseases .....	—	—	—
Diseases of the Nervous System and Sense Organs .....	—	—	—
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	—	1	1
Diseases of the Respiratory System .....	—	—	—
Diseases of the Digestive System .....	—	—	—
Diseases of the Genitourinary System .....	—	—	—
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	—	—
Symptoms and Ill-Defined Conditions .....	—	—	—
Accidents, Poisoning and Violence .....	—	—	—
TOTALS .....	—	1	1

TABLE 53  
AGES AT DEATH  
ALBERTA HOSPITAL, RAYMOND

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	—	—	—
30 - 39 .....	—	—	—
40 - 49 .....	—	—	—
50 - 59 .....	—	—	—
60 - 69 .....	—	—	—
70 - 79 .....	—	—	—
80 - 89 .....	—	—	—
90 - 99 .....	—	1	1
100 and over .....	—	—	—
TOTALS .....	—	1	1

TABLE 54  
DEATHS BY PSYCHIATRIC DIAGNOSIS  
ALBERTA HOSPITAL, RAYMOND

Diagnostic Classification	Male	Female	Total
Senile and Presenile Dementia .....	—	1	1
Alcoholic Psychosis .....	—	—	—
Psychosis Associated with Intracranial Infection .....	—	—	—
Psychosis Associated with Other Cerebral Condition .....	—	—	—
Psychosis Associated with Other Physical Conditions .....	—	—	—
Schizophrenia .....	—	—	—
Affective Psychoses .....	—	—	—
Paranoid States .....	—	—	—
Other Psychoses .....	—	—	—
Unspecified Psychoses .....	—	—	—
Neuroses .....	—	—	—
Personality Disorders .....	—	—	—
Sexual Deviation .....	—	—	—
Alcoholism .....	—	—	—
Drug Dependence .....	—	—	—
Physical Disorders of Presumably Psychogenic Origin .....	—	—	—
Special Symptoms not Elsewhere Classified .....	—	—	—
Transient Situational Disturbances .....	—	—	—
Behaviour Disorders of Childhood .....	—	—	—
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	—	—
Mental Retardation .....	—	—	—
Epilepsy .....	—	—	—
Observation Without Need for Further Medical Care .....	—	—	—
TOTALS .....	—	1	1

### ROSEHAVEN, CAMROSE

A. R. Schrag, M.D., C.R.C.P.(C),  
Medical Superintendent to September 30  
F. J. Edwards, M.D., C.M., C.R.C.P.(C),  
Medical Superintendent from October 1

### MOVEMENT OF POPULATION

There were 401 patients, 214 men and 187 women on the books at Rosehaven on December 31, 1969. On December 31, 1970 there were 335 patients, 175 men and 160 women on the books, a decrease of 66 from the previous year. There were no patients on leave at the end of the year.

#### Admission of Patients

Ten patients were admitted to Rosehaven from other hospitals within the Division, five were transferred in under medical certificates and five were admitted on voluntary status.

Of the number admitted from hospitals within the Division, six were from Alberta Hospital, Ponoka, five men and one woman; four were from the Alberta Hospital, Edmonton, three men and one woman. There were 17 less admissions from other hospitals within the Division than in the previous year.

Four patients were changed from medical certificates to voluntary status. At the end of the year, only two patients remained on renewal certificates.

#### Separation of Patients

There were 76 separations during the year. Of these, 68 were attributable to death; 44 men and 24 women. Four women and three men were discharged to Nursing Homes and one woman was discharged to another hospital within the Division.

### GENERAL HEALTH OF PATIENTS

The general health of the patients was considered satisfactory considering their age and many chronic conditions.

During the year there were a number of injuries as a result of accidental falls or interference by other

patients. Most of these accidents were of a minor nature and required only first aid measures. There were 23 accidents which required medical attention or x-ray investigations. These included eight fractures and three lacerations which required suturing.

Nine patients required surgery.

There were three biopsies and 10 cystoscopies and urethral dilations.

Several patients wandered from the grounds but were returned without incident.

The Mobile Chest X-ray Unit of the Division of Tuberculosis Control x-rayed patients and staff on October 5 and 6, 1971. Rechecks on chest x-rays were also done during the year as recommended by the Division of Tuberculosis Control.

### CLINICAL WORK

Medical care was provided by the Smith Clinic, Camrose. A doctor called regularly and responded to emergency calls when necessary. An average of 67 patients required daily bed care. This number included those who required extra bed rest each day.

A dentist from Alberta Hospital, Edmonton, visited during September for routine dental examinations and extractions as necessary. Eight patients required emergency work which was done locally.

The service of a local optometrist was available for eye examinations and glasses were provided to patients as required.

#### Out-Patient Services

There were five minor surgical procedures performed at St. Mary's Hospital. Two patients were examined at the Smith Clinic and two at the Cancer Clinic for follow-up cancer care.

#### Out-of-Hospital Clinical Services

A total of 37 patients were admitted to St. Mary's Hospital, Camrose, and spent 137 hospital days receiving surgical and orthopedic attention.

#### Laboratory and X-Ray Services

Laboratory and X-Ray work done at St. Mary's Hospital included 508 laboratory tests, 105 x-rays and one electrocardiogram besides routine chest x-rays on all new staff. Eighty-four specimens were sent to the Provincial Laboratory for culture and sensitivity tests.

#### Nursing Services

Nursing care of the patients was maintained at a satisfactory level. Due to the advanced age of the patients, a greater number required total nursing care.

Adequate nursing staff was available throughout the year. Vacancies arising from resignations of untrained staff were filled without any difficulty.

#### Occupational Therapy

One Occupational Therapy Aide was added to the staff during the year. More classes were started on some of the wards with a total of 94 patients showing considerable interest and participation. The average daily attendance was 39, an increase of nine patients over the past year. Classes were also continued in the Occupational Therapy area in the Main Building. Fluorescent lights were added in both work rooms which proved very helpful to residents with failing vision.

A booth was entered at the local Jaywalkers' Jamboree which proved very popular and many items sold readily.

One member of the Occupational Therapy Department attended an Activity Aide Training Course during the summer and received a Certificate of Qualification after a six-month period of service.

#### **Review Panel**

There were no complaints forwarded to the Review Panel during the year.

#### **RECREATIONAL PROGRAM**

Recreational programs were carried out in conjunction with the occupational therapy routine. An average of 62 patients enjoyed grounds privileges and were out for daily walks.

Weekly movie films were shown from October to May with an average attendance of 68.

Card and Bingo games were held regularly as well as monthly programs put on by ladies groups from a local church. Other local groups assisted in serving lunch and providing candy at parties held before Easter and Christmas. During the summer, some patients enjoyed occasional car rides and barbecues.

The Ladies Auxiliary to the Royal Canadian Legion visited ex-servicemen and provided gifts at Christmas.

Library books, magazines, radios and television were available on all wards.

The Camrose Ministerial Association provided weekly church services. Visits were made by the Roman Catholic priest whenever requested.

#### **FIRE PROTECTION**

The Fire Protection Officer conducted monthly fire drills on the various wards as well as checking equipment regularly. He attended a one-day seminar on Fire Safety in Edmonton on February 10.

The City of Camrose Fire Chief and his assistant inspected the Rosehaven premises in May and all recommendations have been carried out with the exception of the Automatic Sprinkler System for the basement at Hawthorn.

Four minor fire incidents were reported. All of these fires appeared to be started by cigarette smoking.

#### **HOUSEKEEPING**

The housekeeping program functioned adequately. A routine weekly floor cleaning schedule was carried on which provided good floor care on all wards.

#### **LAUNDRY AND REPAIR SERVICES**

The Laundry functioned efficiently with a slight decrease in the workload. A total of 1,192,883 lbs. of linen was processed, a decrease of 34,547 lbs. over 1969.

The Sewing Room was responsible for repair services as well as sewing various articles for patient and hospital use.

#### **DIETARY**

The Dietary Department prepared meals for a daily average of 375 patients, including many special diets as well as meals for staff members.

The Nutritionist for the Department of Health visited several times during the year. She assisted in menu-planning for regular and therapeutic diets as well as discussing ways and means of increasing the efficiency of this department.

#### **EDUCATIONAL PROGRAM**

An in-service training program was continued for ward aides and institutional attendants.

A classroom was moved to a quieter and more suitable location on the Third Floor. Fluorescent lights, draperies, a bulletin board and a filing cabinet were added and washroom facilities were altered to meet the needs of staff members. Seven reference books were added to the library and several films were shown with good staff attendance.

Orientation of new employees was carried out whenever necessary.

A staff immunization and chest x-ray program was carried out by the Nursing Instructress who also acted as Health Nurse.

#### **BUSINESS ADMINISTRATION**

The Business Office staff functioned efficiently and remained in close liaison with all other departments. Mr. C. Henry, Business Manager, retired and was replaced by Mr. W. Marshall.

#### **GARDENS AND GROUNDS**

The gardens and grounds were well maintained. Cut flowers and plants were supplied to all wards at regular intervals from the greenhouse.

#### **NEW CONSTRUCTION AND RENOVATIONS**

There were no new construction projects during the year.

Renovations included the installation of combination screen and storm doors on all outside corridors at Montrose, Briarcrest and Hawthorn, partitions between toilets on First and Second Floors of Main Building, construction of doorway from Room 46, Briarcrest, to a small outside court, replacement of floor coverings in corridors at Hawthorn and Briarcrest, replacement of the shower stall in the bathroom at Montrose by a toilet. Ventilation was improved in toilet areas in Hawthorn and Montrose.

Areas in the basement of the Main Building were renovated for use by the Housekeeper and her staff.

#### **VISITORS**

The Director and Assistant Director of the Division of Mental Health made regular visits and their instruction and help was much appreciated.

The Dietary Consultant for the Department of Health made several visits during the year.

#### **DEPARTMENT OF PUBLIC WORKS**

Buildings were well maintained and repairs were done promptly and efficiently.

#### **CONCLUSION**

There were 10 admissions to Rosehaven during the year in the form of transfers from other mental hospitals. These admissions filled beds made available by death or discharge. Further admissions were restricted in order to reduce the bed count to 350, a decrease of 44 beds from the previous year end. The decrease in the patient population has resulted in improved nursing care and fewer accidents and fractures among the patients.

We would like to express our appreciation to the personnel of the Department for their guidance and co-operation throughout the year.



TABLE 55  
MOVEMENT OF PATIENT POPULATION  
ROSEHAVEN, CAMROSE

ADMISSIONS:							
First Admissions:	M	F	T	M	F	T	
Voluntary .....	5	—	5	—	—	—	
Two Medical Certificates .....	—	—	—	—	—	—	
Urgent Medical Certificate .....	—	—	—	—	—	—	
Warrant for Examination .....	—	—	—	—	—	—	
Warrant TB Act .....	—	—	—	—	—	—	
From NWT .....	—	—	—	—	—	—	
Remand for Observation .....	—	—	—	—	—	—	
Detention under Sec. 527, CCC .....	—	—	—	—	—	—	
From Gaol under M.H.A. ....	—	—	—	—	—	—	
From Penitentiary .....	—	—	—	—	—	—	
	5	—	5	5	—	5	
Re-Admissions:							
Voluntary .....	—	—	—	—	—	—	
Two Medical Certificates .....	—	—	—	—	—	—	
Urgent Medical Certificate .....	—	—	—	—	—	—	
Warrant for Examination .....	—	—	—	—	—	—	
Warrant TB Act .....	—	—	—	—	—	—	
From NWT .....	—	—	—	—	—	—	
Remand for Observation .....	—	—	—	—	—	—	
Detention under Sec. 527, CCC ..	—	—	—	—	—	—	
From Gaol under M.H.A. ....	—	—	—	—	—	—	
From Penitentiary .....	—	—	—	—	—	—	
	—	—	—	—	—	—	
Transfers In .....	—	—	—	3	2	5	
ADMISSION TOTALS .....	—	—	—	8	2	10	
SEPARATIONS:							
Clinical Progress	M	F	T	Type of Separation	M	F	T
Recovered .....	—	—	—	Direct Discharge .....	3	4	7
Improved .....	—	—	—	Discharge from Leave....	—	1	1
Unimproved .....	3	5	8	Discharge from	—	—	—
Died .....	44	24	68	Unauthorized Leave....	—	—	—
Total .....	47	29	76	Deportation .....	—	—	—
	—	—	—	Transfer Out .....	—	24	68
	—	—	—	Death .....	44	24	68
	—	—	—	TOTAL .....	47	29	76
SEPARATION TOTALS .....	—	—	—		47	29	76
Patients on Books, December 31, 1969 .....	214	187	401				
Patients on Books, December 31, 1970 .....	175	160	335				
Patients in Residence, December 31, 1970 .....	175	160	335				
Patients on Leave or Otherwise Absent, December 31, 1970 .....	—	—	—				

TABLE 56  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ROSEHAVEN, CAMROSE

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	48	57	105	31.3
291	Alcoholic Psychosis .....	4	—	4	1.2
292	Psychosis Associated with Intracranial Infection .....	3	1	4	1.2
293	Psychosis Associated with Other Cerebral Condition .....	45	29	74	22.1
294	Psychosis Associated with Other Physical Conditions .....	—	1	1	0.3
295	Schizophrenia .....	46	34	80	23.8
296	Affective Psychoses .....	8	18	26	7.8
297	Paranoid States .....	6	5	11	3.3
298	Other Psychoses .....	2	—	2	0.6
299	Unspecified Psychoses .....	1	2	3	0.9
300	Neuroses .....	1	—	1	0.3
301	Personality Disorders .....	—	—	—	—
302	Sexual Deviation .....	—	—	—	—
303	Alcoholism .....	1	—	1	0.3
304	Drug Dependence .....	—	—	—	—
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	—	—	—	—
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	8	8	16	4.8
310-315	Mental Retardation .....	2	4	6	1.8
345	Epilepsy .....	—	—	—	—
793	Observation Without Need for Further Medical Care .....	—	—	—	—
	Undiagnosed .....	—	1	1	0.3
	TOTAL .....	175	160	335	100.0

## DEPARTMENT OF HEALTH

TABLE 57  
AGE OF PATIENTS ON ADMISSION  
ROSEHAVEN, CAMROSE

Ages	First Admissions			Readmissions			Transfers			Total			%
	M	F	T	M	F	T	M	F	T	M	F	T	
Under 15 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
15 to 19 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
20 to 24 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
25 to 29 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
30 to 34 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
35 to 39 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
40 to 44 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
45 to 49 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
50 to 54 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
55 to 59 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
60 to 64 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
65 to 69 years .....	—	—	—	—	—	—	—	2	2	—	2	2	20.0
70 and over .....	5	—	5	—	—	—	3	—	3	8	8	8	80.0
TOTALS .....	5	—	5	—	—	—	3	2	5	8	2	10	100.0

TABLE 58  
CAUSES OF DEATH  
(ICDA-8)  
ROSEHAVEN, CAMROSE

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	—	—	—
Neoplasms .....	2	1	3
Endocrine, Nutritional and Metabolic Diseases .....	—	—	—
Diseases of the Nervous System and Sense Organs .....	—	—	—
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	20	7	27
Diseases of the Respiratory System .....	20	13	33
Diseases of the Digestive System .....	1	—	1
Diseases of the Genitourinary System	—	—	—
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	—	—
Symptoms and Ill-Defined Conditions .....	1	3	4
Accidents, Poisoning and Violence .....	—	—	—
Diseases of the Musculo-Skeletal System .....	—	—	—
TOTAL .....	44	24	68

TABLE 59  
AGES AT DEATH  
ROSEHAVEN, CAMROSE

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	—	—	—
30 - 39 .....	—	—	—
40 - 49 .....	—	—	—
50 - 59 .....	—	—	—
60 - 69 .....	2	1	3
70 - 79 .....	9	7	16
80 - 89 .....	28	10	38
90 to 99 .....	5	6	11
100 and over .....	—	—	—
TOTAL .....	44	24	68

TABLE 60  
DEATHS BY PSYCHIATRIC DIAGNOSIS  
ROSEHAVEN, CAMROSE

Diagnostic Classification	Male	Female	Total
Senile and Presenile Dementia .....	14	11	25
Alcoholic Psychosis .....	5	—	5
Psychosis Associated with Intracranial Infection .....	—	—	—
Psychosis Associated with Other Cerebral Condition .....	11	7	18
Psychosis Associated with Other Physical Conditions .....	—	—	—
Schizophrenia .....	9	2	11
Affective Psychoses .....	—	1	1
Paranoid States .....	3	2	5
Other Psychoses .....	1	—	1
Unspecified Psychoses .....	1	—	1
Neuroses .....	—	—	—
Personality Disorders .....	—	—	—
Sexual Deviation .....	—	—	—
Alcoholism .....	—	—	—
Drug Dependence .....	—	—	—
Physical Disorders of Presumably Psychogenic Origin .....	—	—	—
Special Symptoms not Elsewhere Classified .....	—	—	—
Transient Situational Disturbances .....	—	—	—
Behaviour Disorders of Childhood .....	—	—	—
Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	1	1
Mental Retardation .....	—	—	—
Epilepsy .....	—	—	—
Observation Without Need for Further Medical Care .....	—	—	—
TOTALS .....	44	24	68

# INSTITUTIONS FOR MENTAL DEFECTIVES

## ALBERTA SCHOOL HOSPITAL, RED DEER

L. J. le Vann, L.R.C.P. Edin., L.R.C.S. Edin.,  
L.R.F.P.S. Glas., Superintendent

This summary report and Tables 61 to 68 inclusive, include information and statistics of the Pediatric Unit of the Baker Memorial Sanatorium, Calgary.

### MOVEMENT OF POPULATION

The number of patients on the books at the Alberta School Hospital at the end of the year was 1,015. Of this total 139 were on the books at the Calgary Baker Memorial Sanatorium Pediatric Unit.

A total of 96 applications were received during the year and of this number 17 were admitted.

### Admission of Patients

There were 68 admissions during the year, of which 56 were new admissions and 12 re-admissions. Of the total new admissions, 19 were admitted to the Baker Memorial Sanatorium. As in the past all admissions were on a voluntary basis with applications for admission submitted either by the parents, guardians or the Department of Child Welfare.

### Separation of Patients

A total of 46 patients were discharged during the year. Of this total 21 were temporary admissions and discharges for approximately six weeks during the summer months. Also, eight patients were discharged and transferred to other hospitals for care and treatment.

There were 19 deaths, a reduction of two from the previous year and of this number 12 took place at the Baker Memorial Sanatorium.

### GENERAL HEALTH OF PATIENTS

The general health of the trainees remained very good over the year. Dysentery was controlled with only a few sporadic cases isolated. Monthly rectal swabs were done on the Villas which had been most severely affected.

There were numerous minor staphylococcal infections on the Villas where trainees were in need of total care as well as on the Junior Pediatric Unit, but it was felt that the use of special disinfectant cleaning solutions and especially of the new Fogmaster machines were of considerable help in controlling these.

The special low calorie diets were excellent this year and many obese trainees benefited considerably by reduction in weight. Epileptic trainees were reviewed and many of them allowed more freedom with regard to the recreational program, especially swimming. Epileptics who were well controlled were allowed ground privileges without staff escort.

Routine immunization was carried out against typhoid, paratyphoid, tetanus, diphtheria, poliomyelitis and rubella; and routine yearly chest X-Rays and Heaf tests performed. Medications were reviewed monthly or more often when indicated. Yearly physical examinations were performed on all patients and more frequently for each acute illness. Specialist opinion was available whenever required.

## EDUCATIONAL AND CLINICAL WORK

The Sense Training program which included pre-kindergarten and kindergarten instruction enrolled 73 children. During the year seven children were promoted to a Level I, one child transferred, one discharged and three removed from the program and four new children were enrolled into the program.

Twenty-seven pupils graduated from the school in the spring. The Graduation Ceremony was held in the Senior School Auditorium and attended by parents and nursing staff.

Fifteen new pupils were admitted to the regular school's classes. The school attendance totalled 140 pupils during the year.

A Domestic Science class was started which involved ten girls who were no longer taking part in the academic program and six pupils from the opportunity classes at the Red Deer Central Elementary School. This course was directed to the training in the areas of personal hygiene, cooking arts, housecleaning and the standards of personal clothing.

The pupils participated in a creative arts and craft exhibition sponsored by the Red Deer Allied Arts Council. A pharmaceutical company sponsored an art competition and the senior students received certificates of merit for their entries.

A trainee was one of four national winners in the National Christmas Card Painting Contest for his snowman design. The Chairman of the National Christmas Card Committee presented him with a framed reproduction of his painting.

The School's chorus participated in the annual Kiwanis Music Festival. They were awarded an "A" for performance and the Kiwanis Club presented them with a special award on the Grand Concert Night. They also performed at the Auxiliary Hospital and the Christmas Carol Festival sponsored by the Kiwanis Club.

This year's Christmas concert was the play, "The Sleeping Beauty" and was performed by pupils from the School and Linden House with a medley of songs by the School chorus. The Recreational Singers gave a choral performance and the Physical Education class performed gymnastics.

### Medical and Dental Care

Medical services were provided by the Medical Officer, two physicians (on a part-time basis) and the Medical Superintendent. Consultant staff was available from the City of Red Deer comprising virtually all medical specialties.

There was no dentist on staff and dental services were provided by a private dentist from the City of Red Deer. A total of 400 examinations were carried out followed by the necessary fillings, extractions, dentures, fluoride and other preventive dental care procedures.

### Out-Patient Services

The School was called upon by the R.C.M.P. and Department of the Attorney General to see several persons during the year for psychiatric opinion and examination.



### Out of Hospital Clinical Services

Seven trainees were referred to other hospitals for further treatment. Four were referred to the Red Deer General Hospital, one to the Children's Hospital, Calgary, one to the University Hospital, Edmonton, and one to the Misericordia Hospital, Edmonton.

There were 37 major and 46 minor surgical procedures carried out at the School by the Consultant Surgeon. A total of 192 patients from Clinics in Central Alberta were referred to the school for E.E.G tracings.

### Special Pathological Services

Two autopsies were carried out during the year in order to determine more clearly specific causes of death. In neither of these autopsies was it found that death was attributable to other than normal causes.

### Unauthorized Leave

There were 29 cases of leaving without permission involving 20 trainees.

### X-Ray, Electroencephalography and Laboratory

A total of 1,479 X-Rays were taken during the year as well as 25 E.C.G.'s.

A total of 192 electroencephalograms were carried out. Of this total 45 were for Alberta School Hospital trainees; 10 Deerhome patients; 12 Alberta Hospital, Ponoka, patients and 125 out-patient referrals.

The Laboratory carried out a total 6,677 examinations, 3,193 of which were sent to either the Provincial Laboratory or private laboratories.

The laboratory examinations were less than in 1969 because during 1969 there was a great deal of drug research and an epidemic of shigella. Also, during the year the technician spent one month at the University of Alberta learning a chromosome technique associated with a research project on spermatogenesis in mongols.

### Nursing Services

Nursing services were provided on all trainee care areas by Mental Deficiency Nursing Graduates. Some supervisory services were provided by Registered Nurses and some by Mental Deficiency Nursing Graduates.

Students assisted with child care when not in the classroom with a large group of Ward Aides also being involved.

The level of care which the children received was adequate, but nurses were sometimes frustrated, as the time they were able to spend giving children necessary individual attention was limited.

### Nursing Education

The Graduation Exercise was held in September and was one of the largest classes ever to graduate. A total of 32 students graduated, being a combination of the two-year and three-year programs.

There were 38 First-Year Students (12 male and 26 female) and 23 Second-Year Students (three male and 20 female) involved in the 1970 nursing program.

The training program in Mental Deficiency Nursing completed the change-over to a two-year course in conformity with the trends in all nursing courses.

During the year notable advances were made insofar as recognition of Graduates from the nursing course from Alberta School Hospital is concerned. The Provinces of British Columbia and Ontario accepted our Nursing Graduates in their mental retardation care areas.

The Instructors shared the responsibility for in-service training for all Ward Aides and Attendants. They were also involved with educational tours for outside organizations such as Medical Schools and other allied medical sciences. The teaching demands also increased with the advancement of in-service training.

The year 1970 saw the inclusion into the Mental Deficiency Nursing Training Program of a course, Psychology 193, taught by an instructor of the Red Deer College.

Intentions are to continue to upgrade and expand the Mental Deficiency Nursing Course.

The lecturing staff organized and conducted 28 educational tours involving 488 lay and professional people. These groups were University Graduate and Undergraduate students, Nursing personnel, Health Units and Hospital staff as well as members of Diagnostic and Treatment Centre staff.

### Occupational and Vocational Training

During 1970 a total of 166 trainees attended Occupational Therapy classes.

The Department maintained a high standard of performance, but experienced some difficulty because of limited facilities. The space available restricted the number of trainees per class to a small number. The training program also was revised as it was deemed necessary to lengthen the training period per class and this also contributed to the overcrowding and the number of trainees who could be enrolled. Two changes in space have been to use the Sewing and Exhibit rooms as a classroom and also use the staff lunchroom as a preparation area for ceramic classes.

Despite the limitation in facilities Occupational Therapy training was successful and the standard of workmanship was kept up throughout the year. The trainees made a good showing at the Calgary and Edmonton Exhibitions. Of the 55 entries to the Calgary Exhibition there were 43 awards; 17 firsts, 14 seconds, 11 thirds and one Grand Prize.

At the Edmonton Exhibition it was an open competition; whereas in previous years there was a special exhibit class for retarded and handicapped children. With this greater competition the children did exceptionally well; of the 48 entries there were 34 awards; 14 firsts, 13 seconds, six thirds and one Grand Prize.

As in the past there were two annual sales and no difficulty was experienced in selling all of the articles in the first two hours.

The classes in Vocational Training proved very useful in preparing the boys likely to be discharged. Their training consisted of instruction in the operation of power tools and the manipulative skill for woodwork. In addition to the building of garden furniture, polished tables, lamps and bowls, the boys com-

menced work on a "Fireball Class" sail boat and a storage room on the Curling Rink. During the summer they also built a picnic shelter and sidewalks.

The Farm Instruction program continued its success in training the boys in the skills of farming. During the year there were 14 boys receiving this instruction. This farm program included instruction in the operation of all farm equipment; the care of dairy, beef herds and swine; the operation of milking machines as well as the pasteurization of milk. The tractor driving program progressed favorably as a result of additional lands and the trainees had more opportunity to work under actual field conditions.

Tentative plans have been made to have the farm trainees attend "The Little Royal", a fair held at the Olds Agricultural and Vocational College. This fair includes livestock shows and a variety of agricultural displays.

Two staff attended a summer course for Occupational Therapy Aides at the University of Alberta, Edmonton.

### **Social Service Department**

This Department was operated by our Placement Officers on behalf of the trainees. Their workload was as follows:

- 292 Office Interviews
- 48 Admission Interviews
- 217 Home and Trainee visits
- 209 Shopping visits
- 51 Miscellaneous trips
- 29 Trainees presented to Eugenics Board

There were a total of 90 trainees placed in permanent, temporary and day-working situations and supervision was carried out on a regular basis.

These trainee placements were within the the City of Red Deer and the Central Alberta region. Without this operation these trainees might have remained in hospital all their lives. It is also doubtful if these trainees could have adjusted to the Community involvement without the supervision by the Placement Officers.

### **Department of Psychology**

Psychological testing was carried out to confirm previous psychological ratings wherever indicated.

### **RECREATIONAL PROGRAMS**

The Recreational Therapy Program was on a daily basis, commencing at 7:30 a.m. to 8:00 p.m. throughout the week and on weekends. Special activities such as concerts, theatre, hockey games and fairs often extended beyond these times. The program was extended to more of the retarded children who could not receive Sense Training because of their more severe retardation.

The facilities for indoor recreation were limited and it became necessary to utilize as much as possible the outdoor facilities, Villa dayrooms and the City of Red Deer facilities.

The City of Red Deer Swimming Pool was utilized three times weekly since September and twice weekly before September. The swimming activity which included all the instructions to swimming proved to be a success and very beneficial to the children.

The Gull Lake camp was utilized for four months and was also used for day camp trips three times weekly. Two hundred and forty-two trainees enjoyed these facilities during the summer months.

Alberta's first Special Games for retarded children were held in Calgary June 12 and 13. The Alberta School Hospital did exceedingly well, winning Gold Medals in all events except men's bowling, which earned a Bronze Medal.

The renovated camp area to the east of the Hospital with two wading pools, horseshoe pits, shelters and playground equipment was kept very busy the past summer.

### **Library Service**

During the year a total of \$1,300.00 was made available for additions to Libraries being maintained for the medical staff, therapists, nursing school and Linden House. In addition, a patient library was maintained as part of the day school complex.

Some centralization of this service is being considered in order to obtain greater flexibility in usage and to avoid possible duplication in purchasing new volumes.

### **Chaplaincy Service**

This service was provided by three protestant churches, whose ministers held Sunday afternoon services in the Recreation Hall one month at a time on a rotation basis. The Catholic priest also called when required. In addition, the Recreation Department operated a bus service to all the major Red Deer churches on Sunday mornings for those patients wishing to attend.

### **EUGENICS BOARD**

The Eugenics Board met at Alberta School Hospital on three occasions. The Board was asked to consider 34 patients and all cases were passed by the Board for surgery.

Forty-five sterilizations were carried out by the Eugenics Surgeon; these comprised of 33 cases from Alberta School Hospital (13 male and 20 female, of which five were female out-patients) and 12 cases from Deerhome (six male and six female).

### **FIRE PROTECTION**

This program included a 21-man volunteer fire crew who were always on call, three of whom were on duty in the Fire Hall each night for a twelve-hour shift on a rotational basis.

Training of this crew was accomplished by at least two, one hour periods of instruction each month; both in theory and practical application of all fire fighting equipment. During 1970, 43 instructional crew drill periods were held, usually during normal daylight working hours. In February, two crew members attended a one-day Seminar in Edmonton on Hospital Fire Prevention and reported to the rest of the crew on return. Four crewmen attended a one-week Pump Operators course at the Alberta Fire School at Vermilion and the Chief and Deputy attended one week Officer Training Part II during late spring. Approximately one-third of the crew have had some formal fire fighting training.



During the latter part of April and most of May the fire crew patrolled grounds until midnight nightly and an Institutional Attendant was on foot patrol until daylight. This action was taken as a result of numerous fires occurring in Red Deer. The fire patrols continued until the apprehension of an arsonist.

Every effort was made to provide an effective and comprehensive fire prevention and control service through staff training, building inspections, evacuation drills, maintenance of a functional crew and apparatus by consistent training, regular periodic checking of truck, ancillary equipment, apparatus, fire doors, chutes, escapes and fire extinguishers.

### **VOLUNTEERS**

The Canadian Mental Health Association has organized a Volunteer Service at Alberta School Hospital.

These enthusiastic young High School students spent time with the children after school — playing games, reading stories or at times visited and exchanged ideas. They assisted with swimming each Sunday. These young people provided a useful service and it is hoped that they received personal satisfaction in giving pleasure to the children.

### **LAUNDRY AND LINEN SERVICE**

#### **Laundry Service**

No major changes took place in this department and other than a few problems arising out of the distribution of uniforms, clothing and linen, this department functioned fairly well. The weekly average showed a decrease from 50,694 pounds in 1969 to 48,719 pounds in 1970.

#### **Linen Service**

This department provided adequate service in the mending of personal clothing, uniforms, bedding and linen items as well as the manufacturing of some items not readily available from regular sources of supply.

### **DIETARY DEPARTMENT**

This department provided a well balanced daily diet to both trainees and staff in addition to operating a camp kitchen at Gull Lake for the summer months.

An average of 163 daily meals were served in the staff dining room in addition to the three regular daily meals supplied to all trainees.

### **ADMINISTRATION**

#### **Business and Financial Department**

The Business Offices provided supportive services to the departments and activities of the Hospital, which included assistance with budget preparation and financial control, purchasing supplies, equipment and materials.

Total Institutional operating costs for the fiscal year 1969-70 amounted to \$4,098,957.07. The net patient cost was \$11.73 per patient day compared to a net patient cost of \$10.39 for the year 1968-69. This increase in net patient cost was the result of salary increases, higher food costs and increased clothing and other supplies. There was also a decrease in

revenues received from maintenance charges as fewer patients are paying the \$2.00 charge per day and collections were more difficult for family economic reasons.

In addition to its responsibilities for appropriated budgeted funds, this department also administered the funds belonging to trainees (patients), which provided spending money for canteen purchases, gifts, entertainment and personal clothing. Many parents generously supplied regular monthly allowances, which contributed so much to the general morale, welfare and happiness of the children. Efforts were made through the Department of Social Development to obtain similar funds for the large number of trainees not fortunate enough to have parents interested in their daily welfare.

#### **Stores and Purchasing**

The provision of adequate budgets and the normal availability and delivery of most items enabled this department to operate smoothly and efficiently.

#### **Personnel Department**

The department continued in its supportive role of providing personnel services to all departments.

The employee turnover of 280 employees reflected a favorable trend when compared to the overall positions available of 820.

In addition to this, the number of appointments was 324 and the number of retirements was one.

There were 820 budgeted positions at the close of the fiscal year, representing 630 regular established positions and 190 summer relief positions.

### **FARM, GARDENS AND GROUNDS**

#### **Field Crops**

The Lease on approximately 110 acres of land was terminated by the owners, but that was offset by the leasing of another 244 acres a few miles away, which enabled the growth of a surplus of oats and barley and sufficient hay and greenfeed for the needs; thus eliminating the necessity of purchasing feed other than the necessary protein supplements and minerals. Pastures were also better this year than last.

#### **Dairy Herd**

Type classification under selective registration continued to improve slowly. The Breed Class average for milk production was also up a little over last year. The loss of two good producing cows due to death from natural causes affected the total yield somewhat, but this, of course, is a frequent problem associated with the raising of livestock. Two cows, which were selected by the Holstein Friesian Association, were sold at the Alberta Breeders' sale at Calgary in August for a good price, one of them bringing the fourth highest price out of a total of 51 head sold by auction.

#### **Beef Herd**

The beef herd remained fairly constant due to the availability of land for pasture. The herd bull suffered an injury, necessitating disposal. His replacement came down with a bladder stone two months after purchase and had to be disposed of on recommendation of the Veterinarian. However, the pasture



was good this year and the calf crop was weaned in the fall in very good shape due to a good milk production from the cows.

### **Pigs**

A new boar was obtained last summer from purebred Yorkshire show stock and to date good sized litters of good quality stock have resulted.

### **Poultry**

The same type of hybrid bird used for the past few years was still in use and there did not appear to be anything better on the market. The present flock produced a slightly lower percentage of lay than last year.

### **Garden Vegetables**

The vegetable crop was above average yield and harvested in good condition. Keeping qualities were very good, especially for potatoes.

### **Grounds**

The grounds area increased considerably with the completion of grass seeding in the new sports and recreation area south of the Curling Rink. A gravelled roadway was also completed on the perimeter of this area. Some new hedges were planted on the west slope near 40th Avenue and are growing well. New water lines were installed in the park area west of the School and the new recreational area. Co-operation between Department of Health employees and Department of Public Works employees was fairly good in the maintenance of both garden and grounds.

### **Snow Removal**

Grader operators were made available from both Department of Public Works and Department of Health. Co-operation between both Departments was necessary to provide both men and equipment for all snow removal and road sanding work.

## **DEPARTMENT OF PUBLIC WORKS**

Relations with the Department of Public Works Maintenance Branch were fairly good last year and the majority of items listed on daily Work Orders issued to them were carried out quickly and efficiently.

## **CONSTRUCTION AND RENOVATIONS**

No major construction was undertaken during 1970. General maintenance continued. Up-grading of the hot water supply to the Laundry was well underway.

### **VISITORS**

Many groups of visitors came to the School to see and discuss with members of the staff the many programs for the care and training of the children. These groups were from the following:

University of Alberta, Edmonton — Faculty of Medicine, Nursing (Public Health) and Education (Psychology); University of Alberta, Calgary — students from Educational Psychology; Northern Alberta Institute of Technology — Social Service students; Alberta Hospital, Ponoka — Occupational Therapists; Red Deer Health Unit — Dental Hygienists; Drumheller High School — Sociology Class; Calgary General Hospital — Nursing students; Diagnostic and Treatment Centre, Edmonton — Therapists; Red Deer College — Social Service students; Cerebral Palsy Clinic, Calgary — Therapists; Royal Alexandra Hospital, Edmonton — Medical Residents; Ponoka High School — Psychology students.

## **RESEARCH AND EXTRA MURAL ACTIVITIES**

One paper "Clinical Experience with Tarasan and Thioridazine in Mentally Retarded Children" was published by "The Journal of Applied Therapeutics".

Another paper "Clinical Comparison of Haloperidol with Chlorpromazine" was given a firm publication date by the "American Journal of Mental Deficiency" (May, 1971).

With the acquisition of further research equipment work was recommenced on a forthcoming paper "A Study of Spermatogenesis in Mongols".

Channel 11 MEETA of Edmonton came to the School and produced a film which was telecast on two occasions in Edmonton and once on Channel 6 in Red Deer, dealing with the work and program at Alberta School Hospital.

## **CONCLUSION**

The accomplishments were due in great measure to the available counselling and support given by the Division of Mental Health, the Director and Assistant Director, and other Government officials.

## DEPARTMENT OF HEALTH

TABLE 61  
MOVEMENT OF PATIENT POPULATION  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

ADMISSIONS:			M	F	T	M	F	T
First Admissions:								
Voluntary .....			33	23	56			
Two Medical Certificates .....			—	—	—			
Urgent Medical Certificate .....			—	—	—			
Warrant for Examination .....			—	—	—			
Warrant TB Act .....			—	—	—			
From NWT .....			—	—	—			
Remand for Observation .....			—	—	—			
Detention under Sec. 527, CCC .....			—	—	—			
From Gaol under M.H.A. ....			—	—	—			
From Penitentiary .....			—	—	—			
			33	23	56	33	23	56
Re-Admissions:								
Voluntary .....			6	6	12			
Two Medical Certificates .....			—	—	—			
Urgent Medical Certificate .....			—	—	—			
Warrant for Examination .....			—	—	—			
Warrant TB Act .....			—	—	—			
From NWT .....			—	—	—			
Remand for Observation .....			—	—	—			
Detention under Sec. 527, CCC .....			—	—	—			
From Gaol under M.H.A. ....			—	—	—			
From Penitentiary .....			—	—	—			
			6	6	12	6	6	12
Transfers In .....								
ADMISSION TOTAL .....						39	29	68
SEPARATIONS:								
Clinical Progress	M	F	T	Type of Separation	M	F	T	
Recovered .....	—	1	1	Direct Discharge .....	19	13	32	
Improved .....	24	15	39	Discharge from Leave...	9	5	14	
Unimproved .....	4	2	6	Discharge from				
Died .....	11	8	19	Unauthorized Leave...	—	—	—	
Total .....	39	26	65	Deportation .....	—	—	—	
				Transfer Out .....	—	—	—	
				Death .....	11	8	19	
				TOTAL .....	39	26	65	
SEPARATION TOTALS .....					39	26	65	
Patients on Books, December 31, 1969 .....					553	459	1,012	
Patients on Books, December 31, 1970 .....					553	462	1,015	
Patients in Residence, December 31, 1970 .....					430	362	792	
Patients on Leave or Otherwise Absent, December 31, 1970 .....					123	100	223	

TABLE 62  
DIAGNOSIS OF FIRST ADMISSIONS AND RE-ADMISSIONS WITH  
REFERENCE TO DEGREE OF MENTAL RETARDATION  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Diagnosis	First Admissions			Re-Admissions			Total		
	M	F	T	M	F	T	M	F	T
Borderline .....	1	2	3	2	2	4	3	4	7
Mild .....	4	3	7	2	1	3	6	4	10
Moderate .....	6	5	11	—	1	1	6	6	12
Severe .....	12	5	17	2	1	3	14	6	20
Profound .....	10	8	18	—	1	1	10	9	19
Unspecified .....	—	—	—	—	—	—	—	—	—
TOTAL .....	33	23	56	6	6	12	39	29	68

TABLE 63  
AGE OF PATIENTS ON ADMISSION  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Ages	First Admissions			Readmissions			Transfers			Total			%
	M	F	T	M	F	T	M	F	T	M	F	T	
Under 15 years .....	33	21	54	2	4	6	—	—	—	35	25	60	88.2
15 to 19 years .....	—	1	1	1	1	2	—	—	—	1	2	3	4.4
20 to 24 years .....	—	1	1	1	1	2	—	—	—	1	2	3	4.4
25 to 29 years .....	—	—	—	1	—	1	—	—	—	—	—	1	1.5
30 to 34 years .....	—	—	—	1	—	1	—	—	—	1	—	1	1.5
35 to 39 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
40 to 44 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
45 to 49 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
50 to 54 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
55 to 59 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
60 to 64 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
65 to 69 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
70 and over .....	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS .....	33	23	56	6	6	12	—	—	—	39	29	68	100.0

TABLE 64  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	—	—	—	—
291	Alcoholic Psychosis .....	—	—	—	—
292	Psychosis Associated with Intercranial Infection .....	—	—	—	—
293	Psychosis Associated with Other Cerebral Condition .....	—	—	—	—
294	Psychosis Associated with Other Physical Conditions .....	—	—	—	—
295	Schizophrenia .....	—	—	—	—
296	Affective Psychoses .....	—	—	—	—
297	Paranoid States .....	—	—	—	—
298	Other Psychoses .....	—	—	—	—
299	Unspecified Psychoses .....	—	—	—	—
300	Neuroses .....	—	—	—	—
301	Personality Disorders .....	—	—	—	—
302	Sexual Deviation .....	—	—	—	—
303	Alcoholism .....	—	—	—	—
304	Drug Dependence .....	—	—	—	—
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	—	—	—	—
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	—	—	—
310- 315	Mental Retardation .....	553	462	1,015	100.0
345	Epilepsy .....	—	—	—	—
733	Observation Without Need for Further Medical Care .....	—	—	—	—
TOTALS	.....	553	462	1,015	100.0

TABLE 65  
AGE OF PATIENTS ON BOOKS DECEMBER 31, 1970  
WITH REFERENCE TO DEGREE OF RETARDATION  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Age Group	Idiot			Imbecile			Moron			Borderline			Total	
	M	F	T	M	F	T	M	F	T	M	F	T	M	T
0 - 4 .....	14	18	32	7	8	15	1	1	2	—	—	—	22	27
5 - 9 .....	33	29	62	39	47	86	8	5	13	—	—	—	80	81
10 - 14 .....	28	26	54	130	62	192	41	19	60	3	4	7	202	111
15 - 19 .....	19	21	40	87	73	160	46	31	77	1	2	3	153	127
20 - 24 .....	7	6	13	21	33	54	17	13	30	1	2	3	46	54
25 - 29 .....	4	9	13	13	12	25	7	6	13	—	—	—	24	27
30 - 34 .....	3	10	13	7	5	12	1	1	2	1	—	1	12	16
35 - 39 .....	3	1	4	3	—	3	1	—	1	—	—	—	7	1
40 - 44 .....	—	1	1	1	2	3	—	—	—	—	—	—	1	3
45 - 49 .....	2	3	5	2	—	2	—	1	1	—	—	—	4	8
50 - 54 .....	—	3	3	—	2	2	—	1	1	—	—	—	6	6
55 - 59 .....	—	1	1	—	3	4	—	—	—	—	—	—	1	1
60 - 64 .....	—	1	—	—	—	—	—	—	—	—	—	—	1	4
65 - 69 .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70 - 74 .....	—	—	—	1	—	1	—	—	—	—	—	—	1	1
TOTALS .....	113	129	242	312	247	559	122	78	200	6	8	14	553	462

TABLE 66

CAUSES OF DEATH  
(ICDA-8)  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	—	—	—
Neoplasms .....	—	—	—
Endocrine, Nutritional and Metabolic Diseases .....	—	—	—
Diseases of the Nervous System and Sense Organs .....	4	2	6
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	—	—	—
Diseases of the Respiratory System .....	3	1	4
Diseases of the Digestive System .....	—	1	1
Diseases of the Genitourinary System .....	—	2	2
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	4	2	6
Symptoms and Ill-Defined Conditions .....	—	—	—
Accidents, Poisoning and Violence .....	—	—	—
Diseases of the Musculo-skeletal System .....	—	—	—
TOTAL .....	11	8	19

TABLE 67

AGES AT DEATH  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

	Male	Female	Total
Under 1 year .....	—	—	—
1 - 5 .....	—	—	—
6 - 10 .....	7	5	12
11 - 15 .....	3	2	5
16 - 20 .....	1	1	2
TOTAL .....	11	8	19

TABLE 68

DEATHS BY DEGREE OF MENTAL RETARDATION  
ALBERTA SCHOOL HOSPITAL, RED DEER  
(including Baker Memorial San.)

Diagnosis	Male	Female	Total
Borderline .....	—	—	—
Mild .....	—	—	—
Moderate .....	—	—	—
Severe .....	4	6	10
Profound .....	7	2	9
Unspecified .....	—	—	—
Schizophrenia .....	—	—	—
TOTAL .....	11	8	19



**DEERHOME, RED DEER**

**J. M. Brown, M.B., Ch.B., D.P.H.,**  
**Medical Superintendent**

**MOVEMENT OF POPULATION**

The number of patients in residence on 31st December, 1969, was 1,221 of whom 671 were male and 550 were female. On 31st December, 1970, the number of patients in residence was 1,214 of whom 664 were male and 550 were female; in addition 113 patients were still out on leave of absence (67 male and 46 female).

The number of patients on books at the end of 1970 was 1,327 comprised of 731 male and 596 female, which represented a decrease of 26 over the previous year.

**Admission of Patients**

There were 23 male patients and 11 female patients admitted for a total of 34 patients. This represented a decrease of six admissions over the preceding year. All but one of these admissions were voluntary, the exception being one transfer on certificate.

During the year under The Mental Health Act the status of two patients was changed from voluntary to certificate, and the status of 13 patients was changed from certificate to voluntary. In all there were, as of 31st December, nine males and one female on certificate.

**Separation of Patients**

Forty-six patients were discharged, of these 31 were discharged from leave of absence. There were 14 deaths.

**GENERAL HEALTH OF PATIENTS**

The general health of the patients was maintained at a satisfactory level, bearing in mind the numerous chronic disabilities from which many of the patients suffer.

Forty fractures resulted from accidents; most of these were not of a serious nature. Four hip fractures resulted in long periods of confinement to bed.

The total number of accidents was 2,079; many were lacerations and abrasions. More accurate reporting was the principal reason for this increase.

During the year four patients were absent without leave; one was out overnight.

No suicides occurred.

There were two cases of infectious hepatitis, one of which resulted in death.

Two isolations of *Corynebacterium diphtheria* were reported by the Provincial Laboratory from two septic fingers. Both strains proved to be non-toxicogenic on further testing.

Eight isolations of *Strongyloides stercoralis* were notified by the Provincial Laboratory; seven of these patients proved negative on repeated testing following treatment. One patient, however, showed four recurrences, the last occasion being in December, having previously been negative since July.

The organism *Giardia lamblia* was isolated from seven patients. None of these patients showed relapse following treatment.

There have been numerous outbreaks of pinworm infestation, particularly on the lower grade wards, and all cases have responded to treatment. However, relapses are frequent.

One patient was found to be harbouring ova of *Diphyllobothrium latum* (fish tapeworm). Negative results were obtained following treatment. This patient was on leave of absence some three months prior to discovery of this tapeworm and it was, consequently, considered that raw fish may have been eaten at that time.

There was a total of 123 cases of infections, including 80 Staphylococcal infections. These were cases of ear and throat infections, boils, abscesses and infected fingers and toes.

Notifications were made to the Medical Officer of Health as required.

A complete chest X-Ray survey of all patients and staff was commenced. In addition tuberculin skin testing was undertaken of newly employed staff together with other staff and patients, to a total of 678 tests.

All patients and staff were given T.A.B.T., Polio-myelitis Vaccine, Schick tests, and Diphtheria protection where required. Gamma Globulin was given to staff and patients in close proximity to the cases of Infectious Hepatitis.

**CLINICAL WORK**

The Director of the Alberta Guidance Clinic, Red Deer, visited once per week in the capacity of consultant to assess and treat those patients with psychiatric and emotional problems. He made rounds of the wards and was also available to advise the staff in the care of such patients.

Medical care was provided by the Parsons Clinic and full-time medical staff; approximately 245 patients per week were seen by the doctors for varied ailments, medical and surgical consultations and accidents. In all 12,783 examinations were made. The consultant surgeon made 11 visits and some cases were seen at the Out-patient Department of the Red Deer General Hospital; in all 160 patients were presented for surgical consultation.

In addition, the following consultations were undertaken:

Ear, Nose and Throat Specialist	28
Genito-urinary	18
Orthopaedic	6

Sixty-four patients were admitted to the Red Deer General Hospital for surgery; 21 had minor surgery and 43 had major surgery performed.

Dental work was performed regularly, both during the period when we had a full-time dentist and subsequently on a part-time basis, undertaken by one of the dentists in private practice in Red Deer. Two thousand six hundred and ninety-eight dental examinations were undertaken during this year and the following treatment performed:

Extractions	1,888
General Anaesthetics	25
Fillings	277
Provision of Dentures	31
Repairs to Dentures	80

Fifty-one patients were examined by the optometrist and 32 patients were fitted with glasses. There were 135 pairs of glasses repaired. Eighty-three visits were made to the local ophthalmologist for specialist examination and treatment.

During the year, four trainees were accepted by the Olds Agricultural College for training; two were being trained in farm procedures and two in horticultural procedures. Our residents appeared to benefit greatly from these courses, and it was regrettable that the trainees had to be withdrawn at the end of December owing to funds for vocational grants not being available between December, 1970, and April, 1971.

The Vocational Research and Rehabilitation Institute, Calgary, accepted a number of our trainees. During the year ten residents of Deerhome were accepted for training, but some difficulties arose in trainees not being able to handle the new found freedom at the V.R.R.I. This related to "after hours" and it was quite obvious that more pre-training for the outside world must be given at Deerhome before suddenly awarding trainees unaccustomed freedom.

The following was a breakdown of the total number of trainees to date accepted by the V.R.R.I. and the outcome:

	Male	Female	Total
In training .....	7	4	11
Unauthorized leave from V.R.R.I. ....	—	5	5
Returned to Deerhome .....	3	1	4
Left V.R.R.I. for other reasons .....	—	2	2
	10	12	22

In 1970, 18 trainees were discharged from Deerhome to the V.R.R.I. This figure included some placements made in 1969.

One of the patients was discharged from Deerhome in order to attend the Industrial Research and Training Centre in Edmonton and live at home.

### Out-of-Hospital Clinical Services

Thirteen patients were admitted to the Red Deer General Hospital for investigation and treatment. Two patients were admitted to the Alberta School Hospital for surgery, one minor and one major.

Seventeen patients were seen as out-patients at the Red Deer General Hospital. These visits were for consultation and treatment.

A number of patients were seen for follow-up examination at the Parsons Clinic by arrangement with the Cancer Clinic in Edmonton.

Patients were admitted to the under-noted hospitals for the following reasons:

#### Alberta Hospital, Edmonton

Seven cases	Behaviour problems	5
	Chest investigation	2

#### University Hospital, Edmonton

Three cases	Investigation and treatment of neurological conditions	2
	Plastic surgery	1

### Special Pathological Services

Three bone-marrow biopsies were undertaken by the pathologist at the Red Deer General Hospital.

Three autopsies were done by the pathologist at the Red Deer General Hospital.

### X-Ray and Laboratory

Routine chest X-Rays of all patients admitted were taken. There were 1,433 X-Rays taken at Deerhome and a further number of X-Rays were taken either at the Red Deer General Hospital or Parsons Clinic. In addition it was decided that a complete chest X-Ray survey of patients and staff would again be commenced. One thousand, two hundred and seventy-seven chest survey X-Rays were taken and forwarded to the Baker Memorial Sanatorium for interpretation.

Sixteen patients had electroencephalogram examinations and 59 patients had electrocardiogram examinations. Six electro-convulsive therapy treatments were given.

The Laboratory did routine blood work and urinalyses on every patient once during the year, as well as numerous tests ordered by the attending physicians. All patients on tranquilizers and epileptic medications had urinalyses, white blood counts and haemoglobin estimations undertaken more frequently.

### Nursing Services

The nursing services were maintained at a satisfactory level, but it was found somewhat difficult to recruit to the more highly trained nursing positions. An attempt was made to overcome this by employing individuals with requisite training and experience in part-time capacities.

### Occupational and Industrial Therapy

The total number of patients attending occupational therapy classes was approximately 285 daily, with about one-third being male patients.

Many articles of a very high standard were made in woodwork, leather, rugs, basketry, ceramics, embroidery, knitting and weaving. In addition there were many occupational therapy classes held on the wards for those patients incapable of doing intricate handwork or of concentrating for long periods, and for many aged and infirm patients who were unable to make the trip to Beaver House without being exposed to severe weather conditions and possible accidents due to icy sidewalks. One evening occupational therapy class was conducted principally for residents who were working out of Deerhome or in Deerhome during the day.

Forty-three articles were entered in the Red Deer Fair for which 43 prizes were awarded.

The Annual Tea and Sale held in November met with its usual outstanding success and all but a few small articles were sold.

A start has been made on a sheltered workshop program at Deerhome. This was done in the woodwork section and, at present, 38 trainees have been under instruction in woodworking procedures. This program will be gradually expanded.

Many patients were able to work for nominal payment at selected places of employment under supervision, as listed hereunder:

Patients working out by the day:	
16 females	2,711 days accumulated,
	average of 10 girls out each day



60 males 7,195 days accumulated,  
average of 27 boys out  
each day

Patients working out on a monthly basis:

12 females Average of seven months worked  
by each

38 males Average of eight months worked  
by each

Training programs:

5 girls in cafeterias

1 male cleaning porter

4 male trainees at Olds Agricultural College

3 males farm training at individual farms

6 to 8 patients interviewed per day

Home visits:

City 84

Country 186

Clean-up projects were undertaken under contract for the City of Red Deer. These projects proved successful inasmuch as it gave a number of handicapped patients a chance to earn their own spending money under the supervision of a staff.

Approximately 400 male and female patients assisted with the routine work in various departments of Deerhome, such as the laundry, kitchen, stores, and male and female staff residences, as well as working at various seasonal occupations. The quality of their work varied tremendously, but the basic need of the patient to fulfil some occupation was considered of primary importance.

The Placement Officers visited 270 homes and factories, et cetera, where Deerhome patients were placed. Many visits were also made in attempts to find new employment opportunities for patients. A close liaison was maintained with the Department of Social Development.

Four staff attended a summer course for Occupational Therapy Aides at the University of Alberta, Edmonton.

## Department of Psychology

Number of staff in the Department: two

One part-time (one day, twice a week)

psychologist: (complete year)

One full-time psychologist; 1st January, 1970 to

9th October, 1970

Patients interviewed and counselled ..... 141

Number of counselling and interviewing sessions ..... 526

Number of reports written as a result of counselling

sessions, interviews, et cetera ..... 20

Tours of Deerhome for visitors scheduled and conducted ..... 12

Trip to Industrial Research and Training Centre, Edmonton ..... 1

Trip to Vocational Rehabilitation and Research Institute ..... 3

Trip to Olds Agricultural College ..... 1

Training in psychometrics at the Red Deer Guidance

Clinic—half-day sessions ..... 4

Psychometrics carried out ..... 106

Attendance at Eugenics Board ..... 1

Rounds with visiting Psychiatrist ..... 23

Therapy sessions ..... 68

Referrals completed for V.R.R.I. .... 10

Psychological meetings held ..... 3

Ward visits ..... 75

Consultations with staff concerning patients ..... 123

## Review Panel

There were no cases held by the Review Panel on behalf of Deerhome residents.

## RECREATIONAL PROGRAMS

An excellent recreational program was followed throughout the year with careful consideration being given to each patient's limitations, both mental and physical.

In the winter regular activation classes were conducted on the wards, particularly for patients who were unable to go to Beaver Hall. These classes were mainly outdoor during the summer months.

Walking parties (weather permitting) were carried out daily with as many patients participating as were physically fit to do so.

Physical fitness classes were carried out routinely with ingenious methods used to activate the wheelchair patients.

There were 2,114 attendances at swimming classes which were held three times weekly at the downtown swimming pool.

Skating (894 performances) took place on the Deerhome rink and a number of boys took part in hockey games.

Patients were able to take part in bowling at the downtown bowling alley with 1,054 attendances.

During the summer there were 881 attendances at regular bike riding parties. The patients also participated in tennis and badminton.

During the winter tobogganing proved a popular sport.

Other pastimes enjoyed in the Recreation Hall were square dancing, record hops, and round dancing (22,609 attendances). Inside games included bingo, table tennis, cribbage, and card parties. Many patients continued to derive much pleasure from television, radios, record players and pianos.

Other numerous entertainments enjoyed were film shows, professional hockey games downtown, concerts both at Deerhome and downtown, bus rides and picnics, including trips to the Calgary Zoo, and tours to see the Christmas lights.

The Annual Deerhome Fair was held in August and approximately 1,100 patients were able to attend. The Annual Picnic was held on Dominion Day and approximately 464 patients attended; this year all patients chosen to attend were able to participate in the various activities, and consequently the number is smaller than the previous year.

The Red Deer Parade and Fair was attended by 645 patients and 399 patients attended the afternoon performances.

In July the Deerhome Parade was held for the third time. Floats were excellently decorated and patients took part in all aspects of this parade. Some 1,250 patients were involved and thanks are due to the various outside agencies who participated and helped to make this venture an outstanding success.

This year summer camp facilities were again obtained. These were provided at Kannawin Presbyterian Camp, Sylvan Lake, and were operated on a daily basis with transportation from Deerhome. It is hoped that we will be able to have similar facilities each year, and we would like to thank the Ministers of the Presbyterian Churches for permitting us to use these facilities. Six hundred and sixty-three patients were transported to this camp and all enjoyed the outing very much.

The Christmas season brought many extra treats for the patients. Under the organization of the Recreation Director, the talented patients put on an excellent



show for the rest of the patients. Several outside groups kindly visited Deerhome and contributed to the Christmas entertainments. These festivities continued over the New Year's holiday. Approximately 169 patients were able to go home and spend Christmas holidays with their families.

The Recreation staff consisted of seven men and nine women. There was a total of 164,410 attendances for special activities, and the total yearly attendance, including all activities, was 214,613 (Recreation Gym Classes and Ward Motivation 50,203 and Special Activities 164,410). In 1969 the total yearly attendance was 197,628 (Physical Education Classes 40,567 and Special Activities 157,061). Plans were made to expand the recreation program to motivate more of the patients with multiple disabilities and also to ensure that this type of patient would receive the maximum amount of fresh air and sunshine during the summer months.

A library of suitable books for the patients was operated by the Recreation Department. Many patients made excellent use of this library and it is hoped that it may be possible to obtain better facilities for this library and to expand this program.

Weekly non-denominational religious services were held each Sunday in Beaver Hall for the Protestant patients. Roman Catholic Mass was held for Roman Catholic and Greek Catholic patients each month. All clergy were most co-operative in visiting the very sick patients when requested.

### EUGENICS BOARD

Four patients, two male and two female, were presented to the Eugenics Board, all of whom were passed; one case was an out-patient. Eugenics surgery was carried out at the Alberta School Hospital, Red Deer, on 12 patients, six male and six female.

### FIRE PROTECTION

Fire Control Regulations were reviewed and brought up to date during the year. Numerous fire drills were held and at all such drills a representative of the Red Deer Fire Brigade was present. The drills were undertaken in an efficient manner and in the main were satisfactory. There were no fires.

### HOUSEKEEPING

The heavy cleaning was done on all wards by the housekeeping staff. In addition the housekeeping staff was responsible for the cleaning of the Male and Female Staff Residences, Beaver Hall, and both heavy and daily cleaning in the Kitchen and Laundry. It was hoped to expand this program in time to enable housekeeping staff to do wall washing, thus relieving ward staff of such responsibilities and permitting the ward staff to concentrate on matters more directly related to their training. To date, owing to shortage of cleaning staff, it was only possible to undertake wall washing as time permitted.

### LAUNDRY AND REPAIR SERVICES

The number of staff working in the Laundry was 22 female and six male. In addition some 15 female and 12-14 male patients worked in the Laundry and a further 12-14 male patients were employed in delivery.

The weekly poundage was 62,500 pounds. At present all laundry in the washroom is dealt with by Saturday afternoon. The Laundry operated six days a week. On Saturday only two male and one female staff worked.

In the Sewing Room there were 25 female staff and three or four female patients working. The work of the Sewing Room was repairing, marking, folding and issuing uniforms, alterations, checking and cleaning.

### DIETARY

This department had a staff of 61 females (including servery staff) and 20 males. In addition some 50 patients assisted in the Kitchen and Bakery.

The program instituted in 1968 of transferring the servery staff from the Housekeeping Department to the Kitchen staff was continued and proved very satisfactory.

Meals per week for patients: 28,728; special diets: 1,680; staff: 1,260 — for a total of 31,668 meals per week. Night lunches for patients involved 9,877 lunches per week.

### EDUCATIONAL PROGRAM

Deerhome had no School of Nursing.

The following courses were held as part of nursing education and in-service training:

1. Seminar, four and a half days, for 23 Charge Nurses and Supervisors
2. Course of four weeks' duration attended by 18 senior nurses
3. Six basic nursing courses attended by 90 junior nurses
4. Thirty-two orientation programs of one or two days' duration, for new and re-employed staff. Attended by 235 staff members.

In addition, three films of a medical nature were shown to the staff at Deerhome; the total attendance was 147.

Various demonstrations were held on different wards.

Instructional sessions were held at regular intervals by the Occupational Therapy Department. The Recreational Therapy Department held weekly lectures and seminars for the members of that Department.

### BUSINESS ADMINISTRATION

#### Staff Positions

During the year five new positions were created, one of which was a summer relief position.

#### Staff Turnover

In the first half of the year the staff turnover was 25% less than the previous year; in the latter half of 1970 the turnover was 75% less than in 1969.

### GARDEN AND GROUNDS

All garden and grounds staff positions were transferred to the Department of Public Works as of the 1st April.

There were 11 male staff and a great number of patients worked in the grounds and vegetable garden. There were 18,000 bedding plants and 900 potted plants raised.

Deerhome now has 32 acres of landscaped area. The harvest from the vegetable garden was 339 tons. The majority of the crop was good and harvested in good condition. All vegetables produced were stored in the root cellars for winter use.

NEW CONSTRUCTION AND RENOVATIONS

No new construction was commenced. An additional ventilating system was installed in the Sewing Room and appeared satisfactory. The sun screens on the majority of the windows on Nightingale Lodge have done much for the comfort of the patients. It is hoped to expand this to include all windows on Nightingale Lodge.

Reconstruction of the bathing arrangements on Elk Lodge and Nightingale Lodge was commenced. Approximately \$31,500.00 was spent on paving, parking areas, lighting and landscaping.

VISITORS

The Director and Acting Director of the Division of Mental Health visited periodically. Many visits were paid to Deerhome by representatives of the Vocational and Rehabilitation Research Institute, Calgary, and official visitors from many departments of the Government of Alberta and agencies connected with mental retardation. Conducted tours of Deerhome were given on request to many interested community groups.

DEPARTMENT OF PUBLIC WORKS

General maintenance was undertaken as required, and all buildings appeared to be in good order.

STORES

Three male staff were employed in this department and the patient help varied from four to six male patients a day. A considerable shortage of ground level storage existed. New construction would appear to be essential in the very near future.

CONCLUSION

Repeated attempts have been made to allow all patients to live outside of Deerhome who are able to manage with some degree of supervision of their own affairs and for whom suitable working and living arrangements can be made. Hostels, for a small number of patients such as 10 or 12, would undoubtedly serve a very useful function in any community where jobs might be found for the patients. An attempt has also been made to try to acquaint the public more and more with the working of Deerhome. In conclusion I would like to thank the Director and Acting Director of the Division of Mental Health and the other members of the Department of Health for their assistance. I would also like to thank all the members of the staff of Deerhome for the very great help which they have at all times given and to commend them for the excellent manner in which they have carried out their responsible and important duties.

TABLE 69  
MOVEMENT OF PATIENT POPULATION  
DEERHOME, RED DEER

ADMISSIONS:				M	F	T	M	F	T
First Admissions:									
Voluntary .....				11	8	19			
Two Medical Certificates .....				—	—	—			
Urgent Medical Certificate .....				—	—	—			
Warrant for Examination .....				—	—	—			
Warrant TB Act .....				—	—	—			
From NWT .....				—	—	—			
Remand for Observation .....				—	—	—			
Detention under Sec. 527, CCC .....				—	—	—			
From Gaol under M.H.A. ....				—	—	—			
From Penitentiary .....				—	—	—			
				11	8	19	11	8	19
Re-Admissions:									
Voluntary .....				11	3	14			
Two Medical Certificates .....				—	—	—			
Urgent Medical Certificate .....				—	—	—			
Warrant for Examination .....				—	—	—			
Warrant TB Act .....				—	—	—			
From NWT .....				—	—	—			
Remand for Observation .....				—	—	—			
Detention under Sec. 527, CCC .....				—	—	—			
From Gaol under M.H.A. ....				—	—	—			
From Penitentiary .....				—	—	—			
				11	3	14	11	3	14
Transfers In .....							1	—	1
ADMISSION TOTALS .....							23	11	34
SEPARATIONS:									
Clinical Progress	M	F	T	Type of Separation			M	F	T
Recovered .....	—	—	—	Direct Discharge .....			9	4	13
Improved .....	20	14	34	Discharge from Leave .....			19	12	31
Unimproved .....	9	3	12	Discharge from					
Died .....	10	4	14	Unauthorized Leave....			1	—	1
TOTAL .....	39	21	60	Deportation .....			—	—	—
				Transfer Out .....			—	1	1
				Death .....			10	4	14
				TOTAL .....			39	21	60
SEPARATION TOTALS .....							39	21	60
Patients on Books, December 31, 1969 .....							747	606	1,353
Patients on Books, December 31, 1970 .....							731	596	1,327
Patients in Residence, December 31, 1970 .....							664	550	1,214
Patients on Leave or Otherwise Absent, December 31, 1970 .....							67	46	113

TABLE 70  
DIAGNOSIS OF FIRST ADMISSIONS AND RE-ADMISSIONS WITH  
REFERENCE TO DEGREE OF MENTAL RETARDATION  
DEERHOME, RED DEER

Diagnosis	First Admissions			Re-Admissions			Total		
	M	F	T	M	F	T	M	F	T
Borderline .....	—	—	—	1	—	1	1	—	1
Mild .....	4	2	6	7	3	10	11	5	16
Moderate .....	—	4	4	2	—	2	2	4	6
Severe .....	5	2	7	2	—	2	7	2	9
Profound .....	2	—	2	—	—	—	2	—	2
Unspecified .....	—	—	—	—	—	—	—	—	—
TOTAL .....	11	8	19	12	3	15	23	11	34

TABLE 71  
AGE OF PATIENTS ON ADMISSION  
DEERHOME, RED DEER

Ages	First Admissions			Readmissions			Transfers			Total			%
	M	F	T	M	F	T	M	F	T	M	F	T	
Under 15 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
15 to 19 years .....	5	4	9	—	1	1	—	—	—	5	5	10	29.4
20 to 24 years .....	—	—	—	2	—	2	—	—	—	2	—	2	5.8
25 to 29 years .....	—	1	1	3	—	3	1	—	1	4	1	5	14.7
30 to 34 years .....	—	1	1	2	1	3	—	—	—	2	2	4	11.8
35 to 39 years .....	—	1	2	1	1	2	—	—	—	2	2	4	11.8
40 to 44 years .....	1	1	3	1	—	1	—	—	—	3	1	4	11.8
45 to 49 years .....	1	—	1	1	—	1	—	—	—	2	—	2	5.9
50 to 54 years .....	1	—	1	1	—	1	—	—	—	2	—	2	5.9
55 to 59 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
60 to 64 years .....	—	—	—	—	—	—	—	—	—	—	—	—	—
65 to 69 years .....	1	—	1	—	—	—	—	—	—	1	—	1	2.9
70 and over .....	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS .....	11	8	19	11	3	14	1	—	1	23	11	34	100.0

TABLE 72  
PSYCHIATRIC DIAGNOSIS OF PATIENTS ON BOOKS,  
DECEMBER 31, 1970  
DEERHOME, RED DEER

Code No.	Diagnostic Classification	Male	Female	Total	%
290	Senile and Presenile Dementia .....	—	—	—	—
291	Alcoholic Psychosis .....	—	—	—	—
292	Psychosis Associated with Intracranial Infection .....	—	2	2	0.2
293	Psychosis Associated with Other Cerebral Condition .....	7	3	10	0.8
294	Psychosis Associated with Other Physical Conditions .....	—	—	—	—
295	Schizophrenia .....	15	29	44	3.3
296	Affective Psychoses .....	3	4	7	0.5
297	Paranoid States .....	1	—	1	0.1
298	Other Psychoses .....	—	—	—	—
299	Unspecified Psychoses .....	4	18	22	1.6
300	Neuroses .....	—	1	1	0.1
301	Personality Disorders .....	—	—	—	—
302	Sexual Deviation .....	—	—	—	—
303	Alcoholism .....	—	—	—	—
304	Drug Dependence .....	—	—	—	—
305	Physical Disorders of Presumably Psychogenic Origin .....	—	—	—	—
306	Special Symptoms not Elsewhere Classified .....	—	—	—	—
307	Transient Situational Disturbances .....	—	—	—	—
308	Behaviour Disorders of Childhood .....	—	—	—	—
309	Mental Disorders not Specified as Psychotic Associated with Physical Conditions .....	—	—	—	—
310-315	Mental Retardation .....	701	539	1,240	93.4
345	Epilepsy .....	—	—	—	—
793	Observation Without Need for Further Medical Care .....	—	—	—	—
TOTALS .....		731	596	1,327	100.0

TABLE 73  
AGE OF PATIENTS ON BOOKS 31st DECEMBER, 1970  
WITH REFERENCE TO THE DEGREE OF MENTAL RETARDATION  
DEERHOME, RED DEER

Age Group in Years	Profound Mental Retardation			Severe Mental Retardation			Moderate Mental Retardation			Mild Mental Retardation			Borderline Mental Retardation			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Under 15 .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15 - 19 .....	10	3	13	12	7	19	3	4	7	5	3	8	2	—	2	32	17	49
20 - 24 .....	19	12	31	50	35	85	40	21	61	16	9	25	3	6	9	128	83	211
25 - 29 .....	12	13	25	32	22	54	17	13	30	17	12	29	5	3	8	83	63	146
30 - 34 .....	10	19	29	44	28	72	13	14	27	13	9	22	4	2	6	84	72	156
35 - 39 .....	10	5	15	30	19	49	13	9	22	14	8	22	2	2	4	69	43	112
40 - 44 .....	15	4	19	30	22	52	11	9	20	14	16	30	5	1	6	75	52	127
45 - 49 .....	16	14	30	28	26	54	12	15	27	11	17	28	1	2	3	68	74	142
50 - 54 .....	3	4	7	21	19	40	14	9	23	15	12	27	—	2	2	53	46	99
55 - 59 .....	9	5	14	19	14	33	7	11	18	23	16	39	4	3	7	62	49	111
60 - 64 .....	—	5	5	5	13	18	8	11	19	10	15	25	1	5	6	24	49	73
65 - 69 .....	2	—	2	9	7	16	5	4	9	12	9	21	4	1	5	32	21	53
70 and over .....	—	2	2	10	1	11	4	9	13	6	13	19	1	2	3	21	27	48
TOTALS .....	106	86	192	290	213	503	147	129	276	156	139	295	32	29	61	731	596	1,327



TABLE 74  
CAUSES OF DEATH  
(ICDA-8)  
DEERHOME, RED DEER

Disease	Male	Female	Total
Infective and Parasitic Diseases .....	3	1	4
Neoplasms .....	—	—	—
Endocrine, Nutritional and Metabolic Diseases .....	—	—	—
Diseases of the Nervous System and Sense Organs .....	—	—	—
Diseases of the Blood and Blood Forming Organs .....	—	—	—
Mental Disorders .....	—	—	—
Diseases of the Circulatory System .....	2	—	2
Diseases of the Respiratory System .....	3	—	3
Diseases of the Digestive System .....	—	—	—
Diseases of the Genitourinary System....	1	2	3
Complications of Pregnancy, Childbirth and Puerperium .....	—	—	—
Congenital Anomalies .....	—	1	1
Symptoms and Ill-Defined Conditions .....	—	—	—
Accidents, Poisoning and Violence .....	—	—	—
Diseases of the Musculo-skeletal System .....	1	—	1
TOTAL .....	10	4	14

TABLE 75  
AGES AT DEATH  
DEERHOME, RED DEER

	Male	Female	Total
10 - 19 .....	—	—	—
20 - 29 .....	3	—	3
30 - 39 .....	—	—	—
40 - 49 .....	4	—	4
50 - 59 .....	—	2	2
60 - 69 .....	2	1	3
70 - 79 .....	1	1	2
80 - 89 .....	—	—	—
90 - 99 .....	—	—	—
100 and over .....	—	—	—
TOTAL .....	10	4	14

TABLE 76  
DEATHS BY DEGREE OF MENTAL RETARDATION  
DEERHOME, RED DEER

Diagnosis	Male	Female	Total
Borderline .....	—	—	—
Mild .....	—	—	—
Moderate .....	—	—	—
Severe .....	7	3	10
Profound .....	2	—	2
Unspecified .....	1	1	2
Schizophrenia .....	—	—	—
TOTAL .....	10	4	14

**UNIT FOR EMOTIONALLY DISTURBED CHILDREN**  
**LINDEN HOUSE ELEVENTH ANNUAL REPORT**  
**RED DEER**  
**L. J. le Vann, L.R.C.P. Edin., L.R.C.S. Edin.,**  
**L.R.F.P.S. Glas., Superintendent**

**MOVEMENT OF POPULATION**  
The population at Linden House did not vary greatly from the previous year. There were 16 children in residence during 1970, of which three were admitted from outside referrals and one girl of borderline intelligence transferred from Alberta School Hospital to Linden House.

Three children were discharged during the year, two returning to their homes and one child, who in addition to autistic features, was severely retarded, was transferred to Alberta School Hospital.

**GENERAL HEALTH OF PATIENTS**  
The health of the patients was good and there were no incidences of communicable diseases.

**MEDICAL SERVICES**  
Routine medical and X-Ray examinations were carried out where indicated and physicians from Alberta School Hospital carried out any medical consultations required for minor illnesses.

All laboratory procedures for Linden House were carried out by the laboratory at Alberta School Hospital.

Linden House was served in its nursing personnel by students and graduate nurses from Alberta School Hospital. A therapy staff of a psychologist and two social workers provided the psychotherapeutic services for the children. Consultants were available from the City of Red Deer.

There were no deaths on this villa during the year.

Three children improved adequately so that they were able to attend the normal school program provided by the School Division of the City of Red Deer.

Dental services continued to be available through dental sessions provided by a private practitioner from the City of Red Deer.

**THERAPY PROGRAM FOR CHILDREN**  
Whereas the general program of helping children was adequate, the problem still remained with respect to discharges when a child had reached a socially acceptable functional level. Hence, children remained at Linden House for a variety of reasons, the most important being that there were no hostel facilities available for them where they could live when they no longer required hospital care, and in two instances parents flatly refused to take their children home;

1. Because of remarriage.
2. Because the child was an adopted child and the parents wished to be relieved of their responsibilities.

**EXTRA MURAL ACTIVITIES**  
During the year the children were able to participate in tobogganing, skating, swimming, as well as visiting various parks, Kin Canyon, the Exhibition and parade, circus, Calgary Zoo, Public Library, folk festival, Alberta Game Farm, Gull Lake, Burbank and Red Lodge Park. The children also attended Boy Scout and Cub activities, as well as one girl attending Brownies. They also took part in the Miles for Millions Walk, the Kiwanis Music Festival, Skating for Kinex and other activities.

## VISITORS

These were basically the same as those indicated in the annual report for the Alberta School Hospital.

## ACTIVITIES

Bi-weekly conferences were held which included the therapy and nursing staff, to discuss care and treatment of children at Linden House. This presented the opportunity for junior nursing staff to become familiar with any psychiatric problems and how to deal with the emotionally disturbed child.

## NEW CONSTRUCTION AND RENOVATIONS

The floor of this building was re-inforced and made sound, owing to rot in the joists.

## CONCLUSION AND APPRECIATION

In acknowledgment, the Superintendent would like to express his appreciation to all members of the Linden House staff for the excellent care and attention given to all the children under their supervision, as well as the Director and Assistant Director of the Division of Mental Health for their ready availability whenever consultation or assistance was required.

TABLE 77  
MOVEMENT OF PATIENT POPULATION  
LINDEN HOUSE, RED DEER

ADMISSIONS:	M	F	T	M	F	T	
First Admissions:							
Voluntary .....	3	1	4				
Two Medical Certificates .....	—	—	—				
Urgent Medical Certificate .....	—	—	—				
Warrant for Examination .....	—	—	—				
Warrant TB Act .....	—	—	—				
From NWT .....	—	—	—				
Remand for Observation .....	—	—	—				
Detention under Sec. 527, CCC .....	—	—	—				
From Gaol under M.H.A. ....	—	—	—				
From Penitentiary .....	—	—	—				
	3	1	4	3	1	4	
Re-Admissions:							
Voluntary .....	—	—	—				
Two Medical Certificates .....	—	—	—				
Urgent Medical Certificate .....	—	—	—				
Warrant for Examination .....	—	—	—				
Warrant TB Act .....	—	—	—				
From NWT .....	—	—	—				
Remand for Observation .....	—	—	—				
Detention under Sec. 527, CCC .....	—	—	—				
From Gaol under M.H.A. ....	—	—	—				
From Penitentiary .....	—	—	—				
	—	—	—	—	—	—	
Transfers In .....				—	—	—	
				—	—	—	
ADMISSION TOTALS .....				3	1	4	
SEPARATIONS:							
Clinical Progress	M	F	T	Type of Separation	M	F	T
Recovered .....	—	—	—	Direct Discharge .....	1	2	3
Improved .....	1	1	2	Discharge from Leave....	—	—	—
Unimproved .....	—	1	1	Discharge from	—	—	—
Died .....	—	—	—	Unauthorized Leave....	—	—	—
	—	—	—	Deportation .....	—	—	—
TOTAL .....	1	2	3	Transfer Out .....	—	—	—
	—	—	—	Death .....	—	—	—
	—	—	—	TOTAL .....	1	2	3
SEPARATION TOTALS .....					1	2	3
Patients on Books, December 31, 1969 .....					8	4	12
Patients on Books, December 31, 1970 .....					10	3	13
Patients in Residence, December 31, 1970 .....					5	3	8
Patients on Leave or Otherwise Absent, December 31, 1970 .....					5	—	5

TABLE 78  
PSYCHIATRIC DIAGNOSIS OF FIRST ADMISSIONS AND  
READMISSIONS  
LINDEN HOUSE, RED DEER

Diagnosis	Male	Female	Total
Borderline Retardation .....	—	1	1
Specific Learning Disturbance .....	1	—	1
Behaviour Disorders of Childhood .....	2	—	2
TOTAL .....	3	1	4

TABLE 79  
AGES ON ADMISSION AND READMISSION  
LINDEN HOUSE, RED DEER

Ages	First Admissions			Readmissions			Total			%
	M	F	T	M	F	T	M	F	T	
Under 15 years .....	3	—	3	—	—	—	3	—	3	75.0
15 - 19 years .....	—	1	1	—	—	—	—	1	1	25.0
20 - 24 years .....	—	—	—	—	—	—	—	—	—	—
25 - 29 years .....	—	—	—	—	—	—	—	—	—	—
30 - 34 years .....	—	—	—	—	—	—	—	—	—	—
35 - 39 years .....	—	—	—	—	—	—	—	—	—	—
40 - 44 years .....	—	—	—	—	—	—	—	—	—	—
45 - 49 years .....	—	—	—	—	—	—	—	—	—	—
50 - 54 years .....	—	—	—	—	—	—	—	—	—	—
55 - 59 years .....	—	—	—	—	—	—	—	—	—	—
60 - 64 years .....	—	—	—	—	—	—	—	—	—	—
65 - 69 years .....	—	—	—	—	—	—	—	—	—	—
70 and over .....	—	—	—	—	—	—	—	—	—	—
TOTALS .....	3	1	4	—	—	—	3	1	4	100.0

TABLE 80  
DISCHARGES BY PSYCHIATRIC DIAGNOSIS AND CLINICAL PROGRESS  
LINDEN HOUSE, RED DEER

Diagnosis	Recovered			Improved			Unimproved			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
Infantile Autism .....	—	—	—	—	—	—	—	1	1	—	1	1
Behaviour Disorder of Childhood .....	—	—	—	1	1	2	—	—	—	1	1	2
TOTAL .....	—	—	—	1	1	2	—	1	1	1	2	3

TABLE 81  
DISCHARGES BY PSYCHIATRIC DIAGNOSIS SHOWING NUMBER OF DAYS IN HOSPITAL  
LINDEN HOUSE, RED DEER

Diagnosis	Under 90 days			Under 182 days			Under 273 days			Under 365 days			Under 730 days			Over 730 days			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Infantile Autism .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	1	1
Behaviour Disorders of Childhood .....	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	1	1	1	1	2
TOTAL .....	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	2	2	1	2	3



# EUGENICS BOARD

The Eugenics Board for the Province of Alberta held eight meetings during the year 1970. These meetings were held at the Alberta Hospital, Edmonton; Alberta Hospital, Ponoka; Alberta School Hospital, Red Deer; and Deerhome, Red Deer. The dates of the meetings held during 1970 were as follows:

February 17 Alberta School Hospital, Red Deer  
 February 18 Alberta Hospital, Edmonton  
 May 12 Alberta School Hospital, Red Deer  
 May 12 Deerhome, Red Deer  
 May 13 Alberta Hospital, Edmonton  
 October 7 Alberta School Hospital, Red Deer  
 October 7 Alberta Hospital, Ponoka  
 October 8 Alberta Hospital, Edmonton.

The Eugenics Board considered a total of 64 cases, 62 of which were passed for surgery. One case was re-presented and passed and one case was deferred in order to obtain further information before a decision was made. Of the 62 cases which were passed by the Board in accordance with The Sexual Sterilization Act (1955-C.311,S.5), 19 were male and 43 female.

Of the 62 cases passed by the Board during the year, 52 had first been examined at an Alberta Guidance Clinic, although some of these had been hospitalized prior to presentation. This group of 52 cases was made up of 17 males and 35 females.

## OPERATIONS

Operations were performed on 63 cases during the year, 22 being male and 41 female. All of these operations were performed at the Alberta Hospital, Edmonton; Alberta School Hospital, Red Deer; and Red Deer General Hospital, Red Deer.

The surgical operations mentioned above were performed by the surgeons of the Board, Dr. J. Ross Vant of Edmonton and Dr. R. M. Parsons of Red Deer.

## BOARD CHANGES

There were no changes on the Board during the year.

## APPRECIATION

As in previous years the Eugenics Board wishes to express thanks and sincere appreciation to the Director and Assistant Director and particularly to the latter in his position as Acting Director, Division of Mental Health, to the Medical Superintendents and their staffs, to the surgeons, and to the Guidance Clinics for their cooperation in connection with the work of the Board.

## TABULAR SUMMARY

A tabular summary of the work of the Provincial Eugenics Board to December 31, 1970, is appended.

CASES PRESENTED AND PASSED  
(To December 31, 1970)

Years	Yearly Totals			Cumulative Totals		
	Male	Female	Totals	Male	Female	Totals
1929-1933	87	201	288	87	201	288
1934-1938	557	438	995	644	639	1283
1939-1943	339	299	638	983	938	1921
1944-1948	237	311	548	1220	1249	2469
1949-1953	187	239	426	1407	1488	2895
1954-1958	302	275	577	1709	1763	3472
1959-1963	206	353	559	1915	2116	4031
1964	43	63	106	1958	2179	4137
1965	28	53	81	1986	2232	4218
1966	51	79	130	2037	2311	4348
1967	27	55	82	2064	2366	4430
1968	36	60	96	2100	2426	4526
1969	25	35	60	2125	2461	4586
1970	19	43	62	2144	2504	4648

OPERATIONS ONLY  
(To December 31, 1970)

Years	Yearly Totals			Cumulative Totals		
	Male	Female	Totals	Male	Female	Totals
1929-1933	48	158	206	48	158	206
1934-1938	198	240	438	246	398	644
1939-1943	122	151	273	368	549	917
1944-1948	87	124	211	455	673	1128
1949-1953	84	162	246	539	835	1374
1954-1958	207	160	367	746	995	1741
1959-1963	178	276	454	924	1271	2195
1964	37	44	81	961	1315	2276
1965	45	47	92	1006	1362	2368
1966	42	65	107	1048	1427	2475
1967	34	63	97	1082	1490	2572
1968	29	40	69	1111	1530	2641
1969	25	38	63	1136	1568	2704
1970	22	41	63	1158	1609	2767

# NATIONAL HEALTH GRANTS

Since 1948 the Federal Government has made a series of Health Grants available to the provinces. Within each grant the province may prepare a project(s) in which it is proposed that a new or extended health service may be financed. If the project is approved by federal authorities the money becomes available to reimburse the province for its expenditure.

The following table shows the amount of these grants for 1970/71, the amount that was committed under the various projects, the amount actually expended and the percentage of the various grants that was expended.

NATIONAL HEALTH GRANTS ALBERTA — 1970-71				
Grant	Amount of Grant	Amount Committed	Amount Expended	Percentage of Grant Expended
Professional Training .....	158,372.00	138,780.73	130,139.81	82.1%
Mental Health .....	309,405.00	309,405.00	309,405.00	100.0%
Tuberculosis Control .....	56,639.00	56,639.00	56,639.00	100.0%
General Public Health .....	608,064.00	608,064.00	608,064.00	100.0%
Medical Rehabilitation and Crippled Children .....	79,299.00	79,299.00	79,299.00	100.0%
Child and Maternal Health .....	129,325.00	129,325.00	129,325.00	100.0%
	<u>1,341,104.00</u>	<u>1,321,512.73</u>	<u>1,312,871.81</u>	<u>97.8%</u>

# CANADIAN RED CROSS BLOOD TRANSFUSION SERVICE

D. I. Buchanan, M.D., F.R.C.Path., D.P.H. (Edmonton) and E. W. Nation, M.B., M.R.C.P. (Calgary)

We have pleasure in submitting the annual report on the Blood Transfusion Service in Alberta for 1970. Statistics on voluntary blood donations to the Red Cross are noted in Table 1.

TABLE 1  
UNITS OF BLOOD COLLECTED, 1970

Jan. 1 to Dec. 31 (Inclusive)	Permanent and City Mobiles	Mobile Clinics	
Northern Alberta .....	28,711	18,617	= 47,328
Southern Alberta .....	23,330	16,171	= 39,501
	52,041	34,788	86,829

## Blood Transfusions

Approximately 150 hospitals still depend upon the Edmonton and Calgary Depots for crossmatching services. By the end of the year, all four of the active treatment hospitals in Edmonton were in a position to perform crossmatching for their own patients, and it is hoped that this will result in a marked saving of donor blood. However, some factors may mitigate against this as we are having to collect more and more fresh blood for specific cases, including fractions such as platelet-rich plasma and Factor VIII cryoprecipitate.

TABLE 2  
TRANSFUSIONS OF WHOLE BLOOD, 1970

Jan. 1 to Dec. 31 (Inclusive)	No. Units Issued	No. Units Used	Patients Transfused
Northern Alberta .....	40,788	29,232	11,099
Southern Alberta .....	35,730	21,566	8,793
	76,518	50,798	19,892

## Plasma

A total of 2,109 two-litre plastic packs of liquid plasma was shipped to the Connaught Laboratories from Edmonton during 1970, and 1,834 two-litre plastic packs were sent from Calgary.

In the latter part of the year, a sudden shortage of human serum albumin developed (due to a possible bacterial contamination), and the Connaught Laboratories had to stop production for a short time. Some of the major hospitals were able to save the existing stocks by using group specific plasma on a temporary basis, in lieu of the serum albumin.

## Factor VIII Cryoprecipitate

The heavy demand for cryoprecipitate in the treatment of patients suffering from hemophilia A continues, and a high proportion of fresh donor blood must be obtained for this purpose at our daily clinics. During 1970, 5,895 units of Factor VIII cryoprecipitate were prepared in Edmonton and 2,754 units were prepared by the Calgary Depot.

It should be noted that Factor VIII concentrate is no longer available through the Connaught Laboratories, and our existing supplies will probably be exhausted sometime in 1971. Dr. Albert Fisher of the Connaught Laboratories reports, however, that attempts are being made to prepare a satisfactory Factor IX concentrate for any unusually severe case of Christmas disease. This would be of great value to such patients since the cost of the one product available from the U.S.A. exceeds \$40.00 per vial.

Although only small volumes of fresh frozen plasma are now required since the advent of the Factor VIII cryoprecipitate, we are finding that there are many requests for platelet-rich plasma, particularly from the Dr. W. W. Cross Cancer Hospital in Edmonton and from all active treatment hospitals where children and adults suffering from leukemia and various malignant diseases are being treated by chemotherapy.

## Rh Prevention Program

Suitable Rh negative women whose sera contain high levels of anti-Rh activity are still being plasma-phered in Edmonton, it being our hope that sufficient anti-Rh gamma globulin can thus be provided to treat all Rh negative obstetrical patients in Alberta who require this new form of preventive therapy. It is possible that there will be a demand for the antenatal use of this product. The work of screening the patients is still being carried out in both depots, and the hospital or doctor concerned is notified immediately when anti-Rh gamma globulin is indicated.

## Rh and Antenatal Studies

A total of 47,188 antenatal, postnatal and related specimens was tested in 1970, as shown in Table 3.

TABLE 3  
Rh, AND OTHER INVESTIGATIONS, 1970

Jan. 1 to Dec. 31 (Inclusive)	Antenatal Specimens and Others Investigated
Northern Alberta .....	26,577
Southern Alberta .....	20,611
	47,188

In conclusion, we would like to express our sincere thanks to the many volunteers who participate in this service. The advice of the Minister and Deputy Minister of Health has been greatly appreciated, and especially that of the senior B.T.S. staff members who are continually striving to improve this service in Alberta.











**PART II**

**ANNUAL REPORT**

OF THE

**Division of Vital Statistics**

OF THE

DEPARTMENT OF HEALTH  
PROVINCE OF ALBERTA

FOR THE YEAR 1970



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## DEFINITIONS

- Infant deaths** —deaths under 1 year of age.
- Neo-natal** —deaths under 28 days (4 weeks) of age.
- Maternal** —deaths due to delivery and complications of pregnancy, childbirth and the puerperium (Categories 640 - 689 International List).
- Stillbirths** —foetal deaths of 28 or more weeks' gestation.
- Perinatal deaths**—foetal deaths of 28 or more weeks' gestation plus infant deaths under 7 days (1 week) of age.
- Natural increase**—excess of births over total deaths. (Death figures do not include stillbirths.)

## RATES

(Unless otherwise indicated computed as follows)

- Per 1,000 population; Live births, deaths, natural increase, marriages.
- Per 100,000 population; Causes of death, divorces.
- Per 1,000 live births; Infant and neo-natal deaths, stillbirths.
- Per 10,000 live births; Maternal deaths.
- Per 1,000 total births (live- and still-born): Perinatal deaths.





# DIVISION OF VITAL STATISTICS

J. COLVILLE, Director

## INTRODUCTION

In general the Vital Statistics rates of the Province for the year 1970, are in an upward trend. There were slight increases in the birth, marriage, stillbirth, perinatal death, infant death, maternal death and post natal death rates, and slight decreases in the death and neonatal death rates as compared to the rates for the previous year. The rate of natural increase, excess of births over deaths, was 13.7 as compared to 13.4 for 1969.

## POPULATION

The population of the Province of Alberta for the year 1970 has been estimated by the Dominion Bureau of Statistics at 1,600,000 an increase of 39,000 over that of the previous year. All rates in this report are based on this figure. Between pages 10 and 11 there is a map of the Province by Census Divisions and commencing on page 11 a table of population by Census Divisions for the years 1961 and 1966. A table setting out the estimated population by sex and age group for 1970 is listed on page 14.

## BIRTHS

During the year there were 31,967 births registered to residents of the Province as compared to 30,855 for 1969 with a corresponding increase in the rate from 19.8 per 1,000 population to 20.0. This is the first year in the last sixteen years in which the birth rate exceeded that of the previous year. Of the total births, 16,473 were males and 15,494 females constituting a sex ratio of 1,063 male to 1,000 female births. During the year 4,082 illegitimate births were registered as compared to 3,809 for 1969 and there was a corresponding increase in the illegitimate birth rate from 12.2 per 100 live births to 12.7. The average number of births per month was 2,664 and this varied from a low of 2,333 for the month of February to a high of 2,828 for May. The ratio of births to deaths was 3.16 and of the total births 31,771 or 99.4 per cent took place in hospitals. The birth total included 31,344 single births, 296 sets of twins and 7 sets of triplets. Of the total births, 23,587 or 77 per cent occurred in urban places of 1,000 population and over and 8,380 or 23 per cent occurred in rural areas. The rate of natural increase was 13.7.

The number of births to residents of the Cities in the Province was as follows: Calgary—8,106; Camrose — 125; Drumheller — 82; Edmonton — 9,063; Grande Prairie—326; Lethbridge—720; Medicine Hat —402; Red Deer—540; and Wetaskiwin—110.

The following table shows the 1970 birth rates for Canada.

Canada .....	17.4	Manitoba .....	18.6
Newfoundland .....	24.2	Saskatchewan .....	17.5
Prince Edward Island .....	17.8	Alberta .....	20.0
Nova Scotia .....	18.5	British Columbia .....	17.2
New Brunswick .....	18.5	Yukon .....	28.2
Quebec .....	15.3	Northwest Territories .....	40.5
Ontario .....	17.6		

## MARRIAGES

A total of 15,285 marriages were registered during the year; an increase of 439 over 1969 and there was a corresponding increase in the rate from 9.5 to 9.6 per 1,000 population. The average number of marriages per month was 1,274 ranging from a high of 2,061 for the month of August to a low of 593 for January. July proved to be the second most popular month for marriage, during which 1,660 were celebrated followed by June with 1,633. Following the pattern for a number of years the most popular age for marriage was 19 for brides and 21 for grooms.

Of the total bridegrooms, 13,052 were bachelors, 509 widowers and 1,724 divorced and of the total brides, 12,844 were spinsters, 699 widows and 1,742 divorcees. Approximately 75 per cent of the brides and 59 per cent of the grooms were under 25 years of age at the time of marriage.

The number of marriages registered in the Cities of the Province was as follows: Calgary—3,983; Camrose — 117; Drumheller — 60; Edmonton — 4,956; Grande Prairie—180; Lethbridge—510; Medicine Hat —331; Red Deer—412; and Wetaskiwin—89.

The following table shows the 1970 marriage rates for Canada.

Canada .....	8.8	Manitoba .....	9.2
Newfoundland .....	8.6	Saskatchewan .....	7.8
Prince Edward Island .....	8.3	Alberta .....	9.6
Nova Scotia .....	8.9	British Columbia .....	9.4
New Brunswick .....	9.1	Yukon .....	12.6
Quebec .....	8.2	Northwest Territories .....	7.2
Ontario .....	9.0		

## DEATHS

There was an increase of 191 deaths to residents as compared to the previous year. During the year 10,112 deaths were registered as compared to 9,921 for 1969, but there was a decrease in the rate from 6.4 to 6.3 per 1,000 population. Of the total deaths, 6,277 were males and 3,825 females giving a sex ratio of 1,636 male to 1,000 female deaths. The average number of deaths per month was 843 ranging from a high of 910 for the month of March to a low of 784 for the month of July. Of the decedents, 2,192 were single, 4,864 married, 3,024 divorced or widowed; 7,283 or 72 per cent died in hospital; 8,118 were attended by a doctor, 12 other than by a doctor and 1,981 of the deaths were investigated by a coroner. Autopsies were performed on the bodies of 5,178 or 71 per cent of the decedents who died in hospital and on 628 or 22 per cent of those who died outside of a hospital.

Heart disease was the leading cause of death and accounted for 3,171 deaths, the second leading cause was Cancer with 1,827, followed by Violent and Accidental deaths with 1,194. Deaths in the Violent and Accidental group include motor vehicle accidents 395; other transport accidents 41; accidental poisoning 72; accidental falls 153; accidents caused by fire 53; accidental drowning 49; accidents caused by firearm mis-

siles 16; accidents, mainly of industrial type 69; all other accidents 77; suicides 213; homicides 35; and injury undetermined if accidental or purposely inflicted 21.

The number of deaths registered in the Cities of the Province was as follows: Calgary—2,364; Camrose—143; Drumheller—63; Edmonton—2,330; Grande Prairie—70; Lethbridge—324; Medicine Hat—249; Red Deer—196; and Wetaskiwin—64.

The following table shows the 1970 death rates for Canada.

Canada .....	7.3	Manitoba .....	8.0
Newfoundland .....	6.4	Saskatchewan .....	7.9
Prince Edward Island .....	9.2	Alberta .....	6.3
Nova Scotia .....	8.8	British Columbia .....	8.0
New Brunswick .....	7.9	Yukon .....	6.8
Quebec .....	6.7	Northwest Territories .....	7.7
Ontario .....	7.4		

### MATERNAL DEATHS

A total of 4 maternal deaths were recorded for the year 1970 as compared to 2 for the previous year and there was a corresponding increase in the rate from 0.6 per 10,000 live births to 1.3.

#### MATERNAL DEATH RATES PER 10,000 LIVE BIRTHS

Canada .....	2.0	Manitoba .....	2.2
Newfoundland .....	3.9	Saskatchewan .....	1.8
Prince Edward Island .....	1.4	Alberta .....	1.3
Nova Scotia .....	1.4	British Columbia .....	1.4
New Brunswick .....	1.7	Yukon .....	—
Quebec .....	2.4	Northwest Territories .....	7.5
Ontario .....	2.0		

### INFANT DEATHS

The deaths of 612 children who died under one year of age were registered as compared to 587 for 1969 and there was a corresponding increase in the rate from 19.0 per 1,000 live births to 19.1.

#### INFANT DEATH RATES PER 1,000 LIVE BIRTHS

Canada .....	18.8	Manitoba .....	18.9
Newfoundland .....	21.8	Saskatchewan .....	22.4
Prince Edward Island .....	22.0	Alberta .....	1.3
Nova Scotia .....	17.3	British Columbia .....	16.9
New Brunswick .....	19.7	Yukon .....	35.5
Quebec .....	20.6	Northwest Territories .....	68.1
Ontario .....	16.9		

### STILLBIRTHS

There was a considerable increase in the number of stillbirths over last year; 392 stillbirths (20+ weeks gestation) and 300 (28+ weeks gestation) were registered as compared to 346 and 270 respectively for the previous year.

### ADMINISTRATION

The Vital Statistics Act, the Marriage Act and the Regulations providing for the licensing of embalmers are administered by the Director, Division of Vital Statistics.

Under the provisions of the Vital Statistics Act, the administrative procedure necessary for matters of civil registration is provided. There are approximately 170 District Registrars located in the larger centres of the Province, whose duties are to acquire the registration of each vital event (birth, stillbirth, marriage and death) which occurs within their district for recording and transmission to the Division on a weekly basis. In addition, adoptions and legal changes of name are received for recording. All registrations are edited, micro-

filmed, etc., arranged and bound in a systematic manner and continuous indexes prepared. Certified copies, photo-copies of original registrations, certified extracts, certificates and verifications are issued to applicants or agencies upon receipt of the prescribed fee. Verifications and photocopies of registrations are also supplied free of charge to other government departments and certain authorized agencies.

Listed below is a summary of work processed under the provisions of The Vital Statistics Act, during 1970:

Births registered .....	31,990
Stillbirths registered .....	397
Marriages registered .....	15,297
Deaths registered .....	10,227
Certificates of birth issued .....	57,334
Certificates of marriage issued .....	25,055
Certificates of death issued .....	8,589
Searches—Public .....	751
Gov't, Depts. and Social Agencies .....	5,411
Legal changes of name recorded .....	1,500
Legitimations .....	397
Delayed registrations of birth .....	954
Adoptions registered .....	3,694

Under the Marriage Act, the Division provides administrative procedure for the appointment of marriage licence issuers, marriage commissioners and the registration of clergymen authorized to perform marriages in the Province. Approximately 145 marriage licence issuers are located in the larger centres of the Province, whose duties are to issue marriage licences in accordance with the provisions of The Marriage Act.

The following summary shows work processed under the provisions of The Marriage Act during the year 1970:

Marriage licences issued .....	15,522
Clergymen registered .....	2,822
Marriage commissioners registered .....	25

Under the Regulations providing for the licensing of embalmers, the Division licences embalmers and registers apprentice embalmers. During the year, 170 embalmers were licensed and 14 apprentice embalmers registered.

### REVENUE AND EXPENDITURE

For the fiscal year ending March 31st, 1971

#### REVENUE

MARRIAGE ACT	
Marriage licences .....	\$ 74,637.50
VITAL STATISTICS ACT	
Birth certificates .....	118,674.00
Marriage certificates .....	50,586.00
Death certificates .....	17,474.00
Certified copies .....	2,716.00
Micro film transcriptions .....	4,588.00
Certificates of authority to register .....	1,818.00
Change of given name .....	281.00
Legitimations .....	800.00
Embalmers licences .....	4,780.00
Apprentice embalmers licences .....	75.00
Search fees .....	828.00
Marriage fees .....	4,768.00
Sundries .....	9,291.72
<b>TOTAL REVENUE .....</b>	<b>\$291,317.22</b>

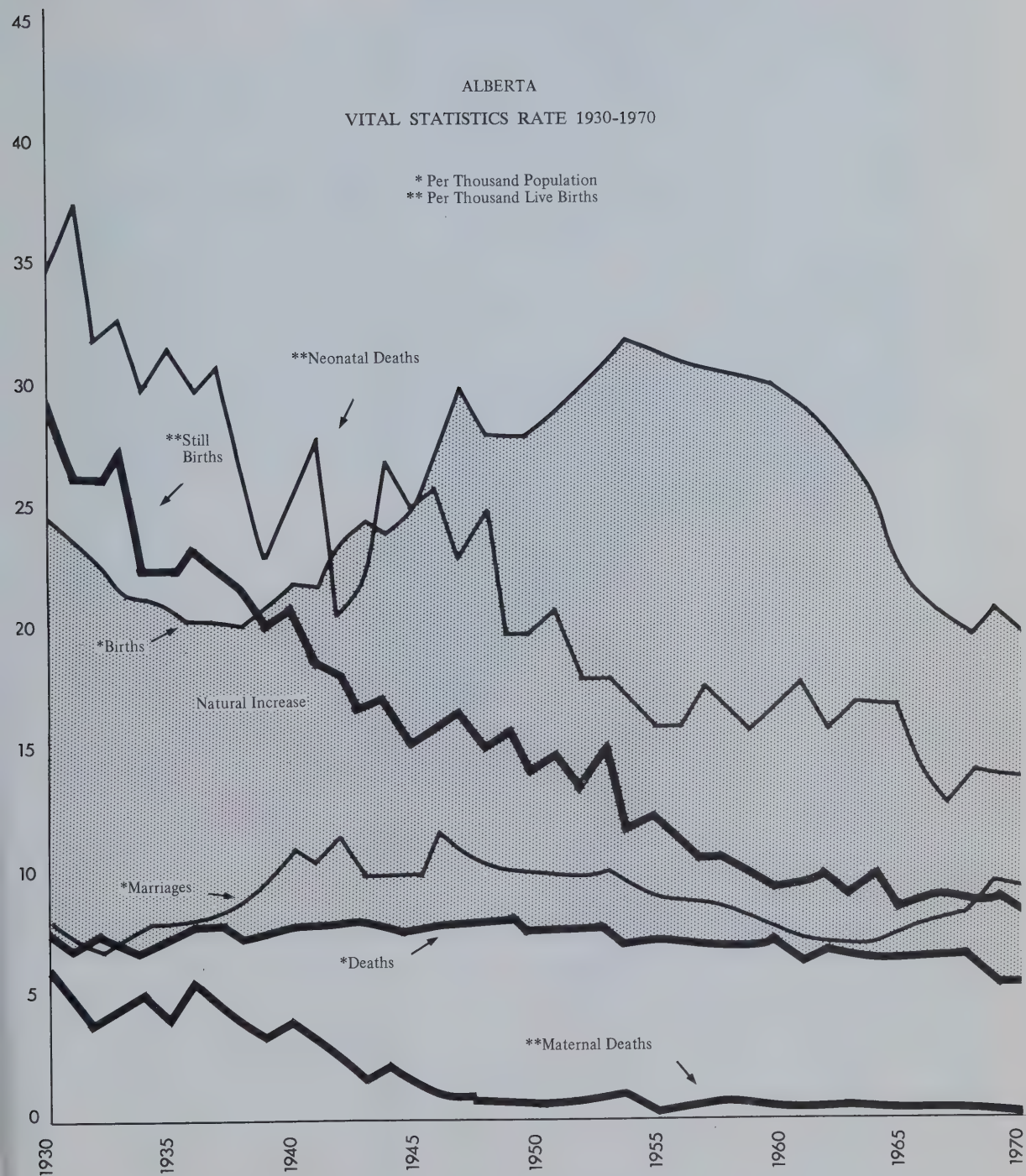
#### EXPENDITURE

SALARIES .....	\$137,086.06
OFFICE EXPENDITURE	
Printing and stationery .....	11,339.62
Furniture, equipment and tools .....	342.51
Freight, express and cartage .....	128.15
Fees and commissions .....	7,240.00
Postage .....	8,388.75
Repairs to office equipment .....	676.58
Telephones and telegraphs .....	66.11
Rentals .....	84.00
Travelling and subsistence .....	446.03
<b>TOTAL EXPENDITURE .....</b>	<b>\$164,753.76</b>



ALBERTA  
VITAL STATISTICS RATE 1930-1970

\* Per Thousand Population  
\*\* Per Thousand Live Births

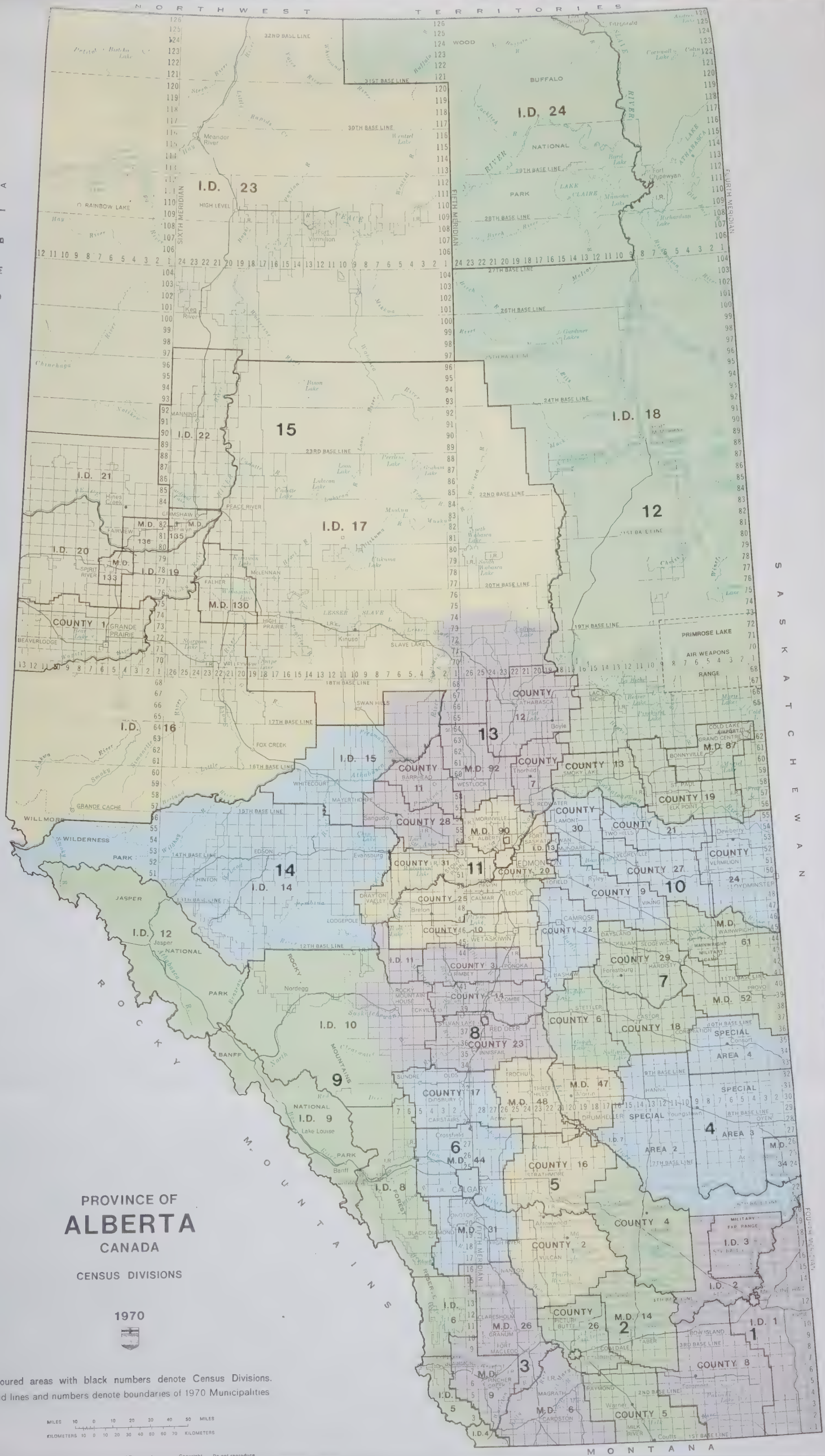






B R I T I S H C O L U M B I A

S A S K A T C H E W A N







POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY  
MUNICIPALITIES FOR CENSUS YEARS, 1961 AND 1966

Subdivision	1966	1961	Subdivision	1966	1961
ALBERTA	1,463,203	1,331,944	Division No. 4	14,224	15,020
Division No. 1	38,858	39,140	34. Acadia	896	965
11. I.D.	3,792 (1)	4,228	Special Area No. 2 (Barry Creek - Sullivan Lake Area)	3,288	3,805
22. I.D.	472	553	Special Area No. 3 (Sound-ing Creek-Neutral Hill Area)	4,686 (1)	4,994
Forty Mile, County No. 8	4,104 (2)	4,716	Towns:		
Army Experimental Range (I.D. 24)	645	786	Hanna	2,633	2,645
Cities:			Oyen	846	780
Medicine Hat	25,574	24,484	Villages:		
Towns:			Cereal	191 (1)	195
Bow Island	1,160	1,122	Chinook	95	114
Irvine	209 (1)	240	Consort	594	557
Redcliff	2,141	2,221	Empress	360	405
Villages:			Veteran	278	239
Burdett	207 (2)	229	Youngstown	357	321
Foremost	554 (2)	561	Division No. 5	35,987	38,115
Division No. 2	82,719	83,306	42. I.D.	3,403 (1,2)	4,370
14. Taber	6,871	7,349	47. Starland	2,535 (2)	2,907
Newell, County No. 4	5,898	6,038	48. Kneehill	6,290 (1,3)	7,008
Warner, County No. 5	4,386 (1)	4,991	Vulcan, County No. 2	4,330 (1,4)	5,018
Lethbridge, County No. 26	9,506 (2)	11,184	Wheatland, County No. 16	5,062 (4)	5,570
Cities:			Indian Reserves	1,714	1,612
Lethbridge	37,186 (2)	35,454	Cities:		
Towns:			Drumheller	3,574 (1)	2,931
Bassano	827	815	Towns:		
Brooks	3,354	2,827	Gleichen	411	426
Coaldale	2,541 (2)	2,592	Strathmore	994 (4)	924
Milk River	861 (1)	801	Three Hills	1,452 (1)	1,491
Picture Butte	1,013 (2)	978	Trochu	780 (1)	671
Raymond	1,950	2,362	Vulcan	1,505	1,310
Taber	4,584	3,951	Villages:		
Vauxhall	934	942	Acme	335	328
Villages:			Arrowwood	174	195
Barons	270	345	Carbon	374 (1)	371
Coutts	427	469	Carmangay	246 (4)	297
Duchess	233	218	Champion	357	419
Grassy Lake	226	274	Cluny	171	174
Nobleford	345 (2)	309	Craigmyle	98	107
Rosemary	221	210	Delia	274	287
Stirling	390	468	Hussar	235	213
Tilley	250	257	Linden	210 (3)	-
Warner	446	472	Lomond	215	244
Division No. 3	29,592	30,967	Milo	154 (1)	167
6. Cardston	4,259 (1)	4,905	Morrin	272	316
9. Pincher Creek	2,739 (2)	3,240	Munson	39	82
26. Willow Creek	4,317 (3)	4,863	Rockyford	281	288
Indian Reserves	4,102	3,889	Rumsey	108	123
Towns:			Standard	264	266
Cardston	2,721	2,801	Torrington	130 (3)	-
Claresholm	2,569 (3)	2,143	Division No. 6	369,140	317,989
Fort MacLeod	2,709	2,490	31. Foothills	6,455 (1,2)	7,896
Granum	295	290	44. Rocky View	8,522 (2,3)	10,748
Magrath	1,220 (1)	1,338	Mountain View, County No. 17	8,656 (4)	9,348
Nanton	940 (3)	1,054	Indian Reserves	771	511
Pincher Creek	2,882 (2)	2,961	Cities:		
Stavely	292	349	Calgary	330,575 (2)	249,641
Villages:			Towns:		
Cowley	163	127	Black Diamond	858	1,043
Glenwood	194 (1)	274	Bowness	(2)	9,184
Hill Spring	190	243	Didsbury	1,586	1,254
			Forest Lawn	(2)	12,263

## DIVISION OF VITAL STATISTICS

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY  
MUNICIPALITIES FOR CENSUS YEARS, 1961 AND 1966. (Continued)

Subdivision	1966	1961	Subdivision	1966	1961
Towns: (Cont'd)			Villages:		
High River	2,239	2,276	Alix	636	631
Montgomery	(2)	5,077	Bentley	637 (2)	588
Okotoks	922	1,043	Blackfalds	729 (2)	477
Olds	2,999 (4)	2,433	Bowden	610 (4)	437
Sundre	831 (4)	853	Caroline	294	321
Villages:			Clive	238	251
Airdrie	778 (3)	524	Delburne	391	450
Beiseker	404 (3)	360	Eckville	716 (2)	580
Blackie	156	184	Elnora	191	214
Carstairs	761	665	Gull Lake (6)	48 (2)	40
Cayley	133	146	Mirror	433	577
Cochrane	819 (3)	857	Norglenwold (6)	23 (5)	-
Cremona	191	221	Penhold	370	319
Crossfield	582	593			
Irricana	104	167	<u>Division No. 9</u>	18,195	20,274
Longview	173 (1)	-	8. I.D.	(1)	80
Turner Valley	625	702	10. I.D.	1,664 (1,2)	1,844
<u>Division No. 7</u>	40,833	40,837	27. I.D.	132	133
52. Provost	2,944 (1)	3,328	33. I.D.	32	34
61. Wainwright	4,454 (2,3)	4,847	46. I.D.	1,651 (4)	3,076
62. Flagstaff	5,977 (4,5)	6,355	50. I.D.	45	41
Stettler, County No. 6	5,640 (6)	5,968	58. I.D.	522 (5)	534
Paintearth, County No. 18 (7)	3,227	3,278	69. I.D.	179 (6)	505
Towns:			78. I.D. (pt.) (7)	73 (6)	-
Castor	1,090	1,025	Banff National Park		
Coronation	811	864	(I.D. 51)	3,381	4,101
Daysland	632	539	Banff (not inc.) (8)	2,896	3,429
Hardisty	597 (5)	582	Jasper National Park		
Killam	866 (4)	552	(I.D. 80)	2,791	2,902
Provost	1,328	1,022	Jasper (not inc.) (9)	2,505	2,360
Sedgewick	760 (4)	655	Waterton Lakes Nat'l		
Stettler	3,988 (6)	3,638	Park (I.D. 8)	266	344
Wainwright	3,867 (2)	3,351	Indian Reserves	1,376	1,441
Villages:			Towns:		
Alliance	291	291	Blairmore	1,779	1,980
Amisk	134 (1)	127	Coleman	1,507 (2)	1,713
Big Valley	378	461	Villages:		
Botha	134 (6)	112	Bellevue	1,174	1,323
Chauvin	362 (3)	395	Canmore	1,445 (4)	-
Czar	222	196	Frank	178	223
Donalda	271	289	Ghost Lake (10)	-	-
Edgerton	345	295	<u>Division No. 10</u>	70,211	70,177
Forestburg	669	677	82. Lamont	5,872 (1)	6,754
Gadsby	84	98	Beaver, County No. 9	6,009 (2)	6,476
Galahad	174 (4)	231	Two Hills, County		
Halkirk	177	172	No. 21 (3)	5,528 (4)	6,205
Heisler	214 (4)	214	Camrose, County No. 22 (5)	8,285 (6,7)	9,041
Hughenden	274	294	Vermilion River, County		
Irma	430	425	No. 24 (8)	8,380 (9)	8,862
Lougheed	252 (4)	217	Minburn, County No. 27 (10)	5,591 (11)	6,181
Rochon Sands (8)	2	28	Elk Island National		
Strome	239 (5)	311	Park (I.D. 97)	63	69
<u>Division No. 8</u>	83,912	76,533	Cities:		
65. I.D.	5,612	5,532	Camrose	8,362 (7)	6,939
68. I.D.	108 (1)	124	Lloydminster (pt) (12)	3,767 (9)	2,944
Ponoka, County No. 3	8,392 (1)	8,688	Towns:		
Lacombe, County No. 14	8,367 (2)	8,725	Bashaw	697 (7)	614
Red Deer, County No. 23 (3)	12,943 (4,5)	13,477	Mundare	564	603
Indian Reserves	1,736	1,246	Tofield	952 (2)	905
Cities:			Two Hills	1,056 (4)	826
Red Deer	26,171 (4)	19,612	Vegreville	3,598 (11)	2,908
Towns:			Vermilion	2,685	2,449
Innisfail	2,531 (4)	2,270	Viking	1,146 (2)	1,043
Lacombe	3,035	3,029	Villages:		
Ponoka	4,421 (1)	3,938	Andrew	525	601
Rimbey	1,502 (1)	1,266	Bawlf	220	203
Rocky Mtn. House	2,446	2,360	Bittern Lake	80 (7)	76
Sylvan Lake	1,332	1,381	Bruderheim	290 (1)	299

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY  
MUNICIPALITIES FOR CENSUS YEARS, 1961 AND 1966. (Continued)

Subdivision	1966	1961	Subdivision	1966	1961
<b>Villages: (Cont'd)</b>			<b>Division No. 12</b>	50,635	47,310
Chipman	183	174	85. I. D.	347	338
Derwent	261	281	87. Bonnyville	10,979 (1)	10,209
Dewberry	198 (9)	179	101. I. D.	1,825	1,951
Edberg	167 (7)	179	102. I. D.	4,926 (2)	4,840
Ferintosh	156 (7)	174	121. I. D.	309	323
Hairy Hill	136	173	143. I. D.	1,792 (3)	1,650
Hay Lakes	196 (7)	233	Smoky Lake, County No. 13	4,028 (4)	4,913
Holden	503	556	St. Paul, County No. 19 (5)	6,710 (6)	7,421
Innisfree	314	291	Wood Buffalo Nat'l Pk.(pt)	231	86
Kitscoty	364	326	Indian Reserves	3,704	3,229
Lamont	835	705			
Lavoy	118	131	<b>Towns:</b>		
Mannville	683 (11)	632	Bonnyville	2,237 (1)	1,736
Marwayne	351	379	Cold Lake	1,289 (1)	1,307
Minburn	143	164	Elk Point	726 (6)	692
Myrnam	460 (4)	441	Fort McMurray (7)	2,614 (3)	1,186
New Norway	220	263	Grand Centre	1,731 (1)	1,493
Paradise Valley	174 (9)	-	Lac La Biche	1,490	1,314
Rosalind	222 (6)	-	St. Paul	3,543 (6)	2,823
Ryley	438	469	Smoky Lake	871 (4)	626
Willingdon	419	429			
<b>Division No. 11</b>	476,053	410,679	<b>Villages:</b>		
77. I. D.	2,022 (1)	2,384	Bonnyville Beach (8)	1 (1)	-
84. Stony Plain	8,846 (2,3)	9,238	Glendon	350 (1)	315
90. Sturgeon	15,926 (2,4)	17,837	Plamondon	195 (2)	-
Wetaskiwin, County No. 10	8,435 (5)	8,701	Vilna	344	400
Strathcona, County No. 20 (6)	16,185 (2,6)	12,075	Warspite	119	153
Leduc, County No. 25 (7)	10,294 (8,9)	10,647	Waskatenau	274	305
Indian Reserves	2,555	2,072	<b>Division No. 13</b>	44,142	45,431
<b>Cities:</b>			92. Westlock	7,378 (1)	7,864
Edmonton	376,925 (2)	281,027	107. I. D.	1,565 (2)	1,571
Wetaskiwin	6,008 (5)	5,300	108. I. D.	629	636
<b>Towns:</b>			122. I. D.	424 (2)	613
Beverly	(2)	9,041	Thorhild, County No. 7	4,324 (3,4)	5,096
Calmar	600 (9)	700	Barrhead, County No. 11	5,467	5,759
Devon	1,283	1,418	Athabasca, County No. 12	6,147 (3,5)	6,792
Drayton Valley	3,352 (1)	3,854	Lac Ste. Anne, County		
Fort Saskatchewan	4,152 (6)	2,972	No. 28 (6)	6,687 (7,8)	7,151
Jasper Place	(2)	30,530	Indian Reserves	353	432
Leduc	2,856 (9)	2,356	<b>Towns:</b>		
Lodgepole	207	508	Athabasca	1,551	1,487
Morinville	995	935	Barrhead	2,592	2,286
St. Albert	9,736 (4)	4,059	Mayerthorpe	916 (8)	663
Stony Plain	1,397	1,311	Redwater	1,041	1,135
<b>Villages:</b>			Westlock	2,685 (1)	1,838
Betula Beach (10)	-	7	<b>Villages:</b>		
Bon Accord	147 (4)	-	Alberta Beach (9)	143 (8)	135
Breton	447 (9)	428	Boyle	437 (5)	346
Crystal Springs (10)	13 (5)	13	Castle Island (9)	-	-
Edmonton Beach (10)	41	20	Clyde	256	259
Entwistle	345	411	Fort Assiniboine	187	216
Gibbons	230	192	Island Lake (9)	9	12
Golden Days (10)	6 (8)	-	Nakamun Park (9)	2 (7)	-
Itaska Beach (10)	1	2	Onoway	375 (8)	302
Kapasiwin (10)	-	2	Radway	158	183
Lakeview (10)	2	12	Ross Haven (9)	17 (7)	-
Legal	572 (4)	524	Sandy Beach (9)	20	4
Ma-Me-O Beach (10)	103	142	Sangudo	314 (8)	325
Millet	418	403	Sunset Point (9)	18	14
New Sarepta	173	184	Thorhild	430 (4)	312
Point Alison (10)	7	6	Val Quentin (9)	8 (7)	-
Seba Beach (10)	155 (3)	113	West Cove (9)	6 (7)	-
Silver Beach (10)	31	14	Yellowstone (9)	3 (7)	-
Spruce Grove	598 (3)	465			
Thorsby	583 (9)	491			
Warburg	407 (9)	285			



## DIVISION OF VITAL STATISTICS

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY  
MUNICIPALITIES FOR CENSUS YEARS, 1961 AND 1966. (Concluded)

Subdivision	1966	1961	Subdivision	1966	1961
<b>Division No. 14</b>	20,358	19,282	<b>Cities:</b>		
78. I.D. (pt) (1)	3,550 (2)	3,484	Grande Prairie	11,417 (2)	8,352
79. I.D.	490	667	<b>Towns:</b>		
95. I.D.	3,202 (3)	3,638	Beaverlodge	1,083 (2)	897
96. I.D. (pt) (4)	410	430	Fairview	1,884 (2)	1,506
109. I.D.	1,457 (2,5)	2,351	Falher	843	741
<b>Towns:</b>			Grimshaw	1,376 (2)	1,095
Edson	3,788 (3)	3,198	High Level	708 (9)	-
Hinton	4,307	3,529	High Prairie	2,241	1,756
Whitecourt	2,279 (5)	1,054	Manning	1,179	896
<b>Villages:</b>			McLennan	1,104 (2)	1,078
Evansburg	472	452	Peace River	4,087 (4)	2,543
Wildwood	403	479	Slave Lake	1,716 (2)	468
<b>Division No. 15</b>	88,344	76,884	Spirit River	1,034 (2)	890
96. I.D. (pt) (1)	150 (1)	-	Swan Hills	1,414	643
110. I.D.	472 (1)	552	Valleyview	1,827 (2)	1,077
111. I.D.	365	353	<b>Villages:</b>		
123. I.D.	86	279	Berwyn	430 (2)	347
124. I.D.	2,732 (2)	3,108	Donnelly	249	289
125. I.D.	3,101	3,212	Girouxville	305	318
126. I.D.	2,726 (2)	2,579	Hines Creek	418	398
128. I.D.	1,100 (3)	769	Hythe	445 (2)	449
129. I.D.	712	577	Kinuso	376	323
130. Smoky River	3,984 (2)	4,094	Nampa	288 (5)	271
131. I.D.	2,163 (4,5)	2,403	Rycroft	539 (2)	500
132. I.D.	2,595 (6)	2,646	Sexsmith	491 (2)	531
133. Spirit River	1,243 (2)	1,318	Wanham	235	251
134. I.D.	2,792	2,505	Wembley	299	303
135. Peace	2,223 (2,4)	2,053			
136. Fairview	1,745 (2)	1,917			
137. I.D.	(3)	174			
138. I.D.	3,251 (4,7)	3,194			
139. I.D.	3,379	2,772			
144. I.D.	84 (8)	212			
145. I.D.	8 (8)	144			
146. I.D.	852 (7,8)	662			
147. I.D.	3,826 (8,9)	3,189			
148. I.D.	63 (8)	86			
149. I.D.	129 (8)	339			
Grande Prairie, County No. 1	8,697 (2,6)	8,803			
Indian Reserves	3,878	3,022			

## ESTIMATED POPULATION BY SEX AND AGE GROUP FOR ALBERTA 1970

AGES	TOTAL	MALE	FEMALE	AGES	TOTAL	MALE	FEMALE
0 - 4	153.7	79.0	74.7	50 - 54	75.2	38.0	37.2
5 - 9	185.0	94.7	90.3	55 - 59	63.7	32.3	31.4
10 - 14	180.3	92.2	88.1	60 - 64	51.5	26.4	25.1
15 - 19	154.8	79.4	75.4	65 - 69	41.1	21.3	19.8
20 - 24	130.6	65.1	65.5	70 - 74	30.2	15.2	15.0
25 - 29	108.1	53.3	54.8	75 - 79	22.0	10.8	11.2
30 - 34	98.4	49.6	48.8	80 - 84	14.2	7.1	7.1
35 - 39	98.5	51.2	47.3	85 - 89	6.5	3.1	3.4
40 - 44	96.5	49.7	46.8	90+	2.3	1.1	1.2
45 - 49	87.4	43.7	43.7				
TOTAL				1,600.0 813.2 786.8			



## DIVISION OF VITAL STATISTICS

TABLE 1  
GENERAL SUMMARY OF VITAL STATISTICS FOR CENSUS DIVISIONS AND  
INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

Census Division or District	Births			Live Births				Birth Weight			Marriages	20-27 Weeks		28+ Weeks	
				In Hospital		%	Attended By Doctor	Illegitimate							
	T	M	F	M	F			M	F	Ratio		2,500- Grams	2,500+ Grams	Not Stated	
Division No. 1															
Bow Island, T.	18	11	7	11	7	100.0	18	2	-	111.1	2	16	-	12	-
Medicine Hat, C.	402	203	199	203	198	99.8	401	21	26	116.9	30	372	-	331	-
Redcliff, T.	38	14	24	14	24	100.0	38	3	2	131.6	4	34	-	10	-
Urban Total	458	228	230	228	229	99.8	457	26	28	117.9	36	422	-	353	-
Rural Total	166	94	72	91	72	98.2	163	3	2	30.1	17	149	-	14	-
Total	624	322	302	319	301	99.4	620	29	30	94.6	53	571	-	367	-
Division No. 2															
Brooks, T.	84	44	40	44	40	100.0	84	6	2	95.2	5	79	-	56	-
Coaldale, T.	49	29	20	28	20	98.0	49	4	3	142.9	3	46	-	27	-
Lethbridge, C.	720	376	344	376	344	100.0	720	42	24	91.7	65	651	4	510	-
Picture Butte, T.	4	1	3	1	3	100.0	4	-	-	-	-	4	-	3	-
Raymond, T.	41	21	20	20	20	97.6	41	3	3	146.3	3	38	-	26	-
Taber, T.	104	55	49	55	49	100.0	104	9	3	115.4	6	98	-	63	-
Urban Total	1,002	526	476	524	476	99.8	1,002	64	35	98.8	82	916	4	685	-
Rural Total	545	277	268	275	264	98.9	542	14	12	47.7	34	510	1	94	-
Total	1,547	803	744	799	740	99.5	1,544	78	47	80.8	116	1,426	5	779	-
Division No. 3															
Cardston, T.	114	54	60	54	60	100.0	114	17	24	359.6	7	107	-	210	-
Clareholm, T.	57	30	27	29	27	98.2	57	-	2	35.1	4	53	-	35	-
Fort Macleod, T.	54	26	28	24	28	96.3	53	1	4	92.6	2	52	-	26	-
Magrath, T.	23	13	10	13	10	100.0	23	-	1	43.5	-	23	-	10	-
Pincher Creek, T.	65	31	34	31	34	100.0	65	4	3	107.7	6	59	-	41	-
Urban Total	313	154	159	151	159	99.0	312	22	34	178.9	19	294	-	322	-
Rural Total	370	168	202	161	194	95.9	358	42	46	347.8	32	338	-	161	-
Total	683	322	361	312	353	97.4	670	64	80	210.8	51	632	-	384	-
Division No. 4															
Hanna, T.	42	19	23	19	23	100.0	42	4	1	119.0	4	38	-	35	-
Urban Total	42	19	23	19	23	100.0	42	4	1	119.0	4	38	-	35	-
Rural Total	184	96	88	94	84	96.7	180	7	2	48.9	9	175	-	43	-
Total	226	115	111	113	107	97.3	222	11	3	61.9	13	213	-	78	-
Division No. 5															
Drumheller, C.	82	39	43	39	43	100.0	82	4	2	73.2	11	71	-	60	-
Three Hills, T.	45	29	16	29	16	100.0	45	1	-	22.2	1	44	-	30	-
Vulcan, T.	24	12	12	12	12	100.0	24	-	-	-	-	24	-	14	-
Urban Total	151	80	71	80	71	100.0	151	5	2	46.4	12	139	-	104	-
Rural Total	455	237	218	235	217	99.3	452	38	33	156.0	29	425	1	141	-
Total	606	317	289	315	288	99.5	603	43	35	128.7	41	564	1	245	-
Division No. 6															
Calgary, C.	8,106	4,117	3,989	4,112	3,979	99.8	8,100	451	478	114.6	738	7,366	2	3,983	-
Didsbury, T.	28	12	16	12	16	100.0	28	1	2	107.1	1	27	-	25	-
High River, T.	35	20	15	20	15	100.0	35	-	1	28.6	1	34	-	39	-
Olds, T.	90	45	45	45	45	100.0	90	5	10	166.7	5	85	-	60	-
Urban Total	8,259	4,194	4,065	4,189	4,055	99.8	8,253	457	491	114.8	745	7,512	2	4,107	-
Rural Total	618	322	296	321	296	99.8	617	36	26	100.3	55	561	2	153	-
Total	8,877	4,516	4,361	4,510	4,351	99.8	8,870	493	517	113.8	800	8,073	4	4,260	-
Division No. 7															
Castor, T.	16	9	7	9	7	100.0	16	3	1	250.0	-	16	-	23	-
Provost, T.	28	16	12	16	12	100.0	28	2	4	214.3	2	26	-	26	-
Stettler, T.	67	33	34	33	32	97.0	67	1	2	44.8	7	60	-	71	-
Wainwright, T.	70	33	37	33	35	97.1	69	4	6	142.9	10	60	-	46	-
Urban Total	181	91	90	91	86	97.8	180	10	13	127.1	19	162	-	166	-
Rural Total	414	207	207	205	205	99.0	410	19	14	79.7	26	387	1	138	-
Total	595	298	297	296	291	98.7	590	29	27	94.1	45	549	1	304	-
Division No. 8															
Innisfail, T.	46	29	17	29	17	100.0	46	3	1	87.0	1	45	-	51	-
Lacombe, T.	57	23	34	23	34	100.0	57	5	5	175.4	7	50	-	67	-
Ponoka, T.	79	41	38	41	38	100.0	79	11	10	265.8	7	72	-	79	-
Red Deer, C.	540	276	264	275	264	99.8	540	40	30	129.6	38	502	-	412	-
Rimby, T.	24	13	11	13	10	95.8	24	3	1	166.7	3	21	-	42	-
Rocky Mountain House, T.	115	60	55	59	52	96.5	114	17	8	217.4	7	108	-	52	-
Sylvan Lake, T.	35	21	14	21	14	100.0	35	3	-	85.7	-	35	-	29	-
Urban Total	896	463	433	461	429	99.3	895	82	55	152.9	63	833	-	732	-
Rural Total	750	407	343	405	342	99.6	749	83	56	185.3	51	697	2	117	-
Total	1,646	870	776	866	771	99.5	1,644	165	111	167.7	114	1,530	2	849	-



TABLE 1  
GENERAL SUMMARY OF VITAL STATISTICS FOR CENSUS DIVISIONS AND  
INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

Census Division or District	Infant Deaths											Maternal Deaths
	Total Deaths		Deaths in Hospital	Total		Neonatal				Post Neonatal		
						Under 7 Days		7 - 27 Days				
	M	F		M	F	M	F	M	F	M	F	
Division No. 1												
Bow Island, T.	11	8	17	-	1	-	-	-	-	-	1	-
Medicine Hat, C.	164	85	188	3	6	2	4	1	-	-	2	-
Redcliff, T.	9	9	10	-	-	-	-	-	-	-	-	-
Urban Total	184	102	215	3	7	2	4	1	-	-	3	-
Rural Total	22	15	21	1	1	1	-	-	-	-	1	-
Total	206	117	236	4	8	3	4	1	-	-	4	-
Division No. 2												
Brooks, T.	21	7	21	-	-	-	-	-	-	-	-	-
Coaldale, T.	18	4	14	-	-	-	-	-	-	-	-	-
Lethbridge, C.	206	118	262	7	7	6	7	-	-	1	-	-
Picture Butte, T.	4	2	3	-	-	-	-	-	-	-	-	-
Raymond, T.	14	3	14	1	-	1	-	-	-	-	-	-
Taber, T.	23	13	25	1	1	-	1	-	-	1	-	-
Urban Total	286	147	339	9	8	7	8	-	-	2	-	-
Rural Total	85	27	71	3	2	2	1	-	-	1	1	-
Total	371	174	410	12	10	9	9	-	-	3	1	-
Division No. 3												
Cardston, T.	18	12	25	1	-	1	-	-	-	-	-	-
Clareholm, T.	21	16	36	1	-	1	-	-	-	-	-	-
Fort Macleod, T.	18	15	21	1	-	1	-	-	-	-	-	-
Magrath, T.	8	1	7	-	-	-	-	-	-	-	-	-
Pincher Creek, T.	13	12	25	-	-	-	-	-	-	-	-	-
Urban Total	78	56	114	3	-	3	-	-	-	-	-	-
Rural Total	82	36	82	5	7	3	4	-	-	2	3	-
Total	160	92	196	8	7	6	4	-	-	2	3	-
Division No. 4												
Hanna, T.	22	11	24	4	-	4	-	-	-	-	-	-
Urban Total	22	11	24	4	-	4	-	-	-	-	-	-
Rural Total	41	24	48	2	-	2	-	-	-	-	-	-
Total	63	35	72	6	-	6	-	-	-	-	-	-
Division No. 5												
Drumheller, C.	39	24	51	-	1	-	1	-	-	-	-	-
Three Hills, T.	8	7	12	-	-	-	-	-	-	-	-	-
Vulcan, T.	17	8	18	-	1	-	1	-	-	-	-	-
Urban Total	64	39	81	-	2	-	2	-	-	-	-	-
Rural Total	119	65	129	4	3	4	2	-	-	-	1	-
Total	183	104	210	4	5	4	4	-	-	-	1	-
Division No. 6												
Calgary, C.	1,346	1,018	1,759	87	63	55	48	8	2	24	13	-
Didsbury, T.	6	6	9	-	-	-	-	-	-	-	-	-
High River, T.	18	16	26	-	-	-	-	-	-	-	-	-
Olds, T.	17	15	25	2	-	1	-	-	-	1	-	-
Urban Total	1,387	1,055	1,819	89	63	56	48	8	2	25	13	-
Rural Total	136	62	140	7	9	5	4	2	-	-	5	-
Total	1,523	1,117	1,959	96	72	61	52	10	2	25	18	-
Division No. 7												
Castor, T.	11	2	10	-	-	-	-	-	-	-	-	-
Provost, T.	8	5	10	1	-	1	-	-	-	-	-	-
Stettler, T.	30	27	47	3	1	2	1	-	-	1	-	-
Wainwright, T.	23	14	31	1	1	1	-	-	1	-	-	-
Urban Total	72	48	98	5	2	4	1	-	1	1	-	-
Rural Total	132	77	154	7	4	4	-	-	1	3	3	-
Total	204	125	252	12	6	8	1	-	2	4	3	-
Division No. 8												
Innisfail, T.	19	18	28	1	1	1	1	-	-	-	-	-
Lacombe, T.	28	24	39	-	-	-	-	-	-	-	-	-
Ponoka, T.	38	29	35	1	-	1	-	-	-	-	-	-
Red Deer, C.	131	65	149	6	5	5	3	-	1	1	1	-
Rimbey, T.	11	7	14	-	-	-	-	-	-	-	-	-
Rocky Mountain House, T.	16	11	20	3	-	2	-	1	-	-	-	-
Sylvan Lake, T.	8	12	15	-	-	-	-	-	-	-	-	-
Urban Total	251	166	300	11	6	9	4	1	1	1	1	-
Rural Total	165	62	160	19	5	9	2	-	-	10	3	1
Total	416	228	460	30	11	18	6	1	1	11	4	1

## DIVISION OF VITAL STATISTICS

TABLE 1  
GENERAL SUMMARY OF VITAL STATISTICS FOR CENSUS DIVISIONS AND  
INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

Census Division or District	Live Births											Marriages	M	F	M	F				
	Births			In Hospital		Attended By Doctor	Illegitimate			2,500- Grams	2,500+ Grams	Not Stated								
	T	M	F	M	F		M	F	Ratio											
Division No. 9																				
Banff, T.	48	24	24	24	24	100.0	48	1	4	104.2	3	45	-	128	-	1				
Bellevue, V.L.	23	11	12	11	12	100.0	23	-	-	-	3	20	-	15	1	-				
Blairmore, T.	37	19	18	18	18	97.3	37	5	2	189.2	4	33	-	14	-	-				
Canmore, V.L.	46	19	27	19	27	100.0	46	3	2	108.7	3	43	-	17	-	-				
Coleman, T.	25	13	12	13	12	100.0	25	3	1	160.0	1	24	-	14	-	1				
Jasper, T.	68	36	32	36	32	100.0	68	5	3	117.6	7	61	-	27	-	2				
Urban Total	247	122	125	121	125	99.6	247	17	12	117.4	21	226	-	215	1	1				
Rural Total	98	46	52	45	50	96.9	96	22	25	479.6	8	90	-	24	-	-				
Total	345	168	177	166	175	98.8	343	39	37	220.3	29	316	-	239	1	4				
Division No. 10																				
Camrose, C.	125	64	61	64	61	100.0	125	7	9	128.0	12	113	-	117	-	1				
Lloydminster, C.(Pt.)	101	54	47	54	47	100.0	101	3	3	59.4	12	89	-	112	1	-				
Two Hills, T.	7	5	2	5	2	100.0	7	-	-	-	1	6	-	3	-	-				
Vegreville, T.	50	24	26	24	26	100.0	50	1	2	60.0	6	44	-	62	-	-				
Vermilion, T.	47	28	19	28	19	100.0	47	2	1	63.8	2	45	-	46	-	-				
Viking, T.	20	8	12	8	12	100.0	20	-	3	150.0	2	18	-	20	-	-				
Urban Total	350	183	167	183	167	100.0	350	13	18	88.6	35	315	-	360	1	1				
Rural Total	577	300	277	299	274	99.3	575	15	16	53.7	40	537	-	231	1	-				
Total	927	483	444	482	441	99.6	925	28	34	66.9	75	852	-	591	2	1				
Division No. 11																				
Devon, T.	28	16	12	16	12	100.0	28	2	-	71.4	1	27	-	10	-	-				
Drayton Valley, T.	112	49	63	49	63	100.0	111	5	5	89.3	18	94	-	57	-	-				
Edmonton, C.	9,063	4,729	4,334	4,719	4,327	99.8	9,060	683	593	140.8	804	8,258	1	4,956	17	40				
Fort Saskatchewan, T.	133	53	80	53	80	100.0	133	4	3	52.6	15	118	-	46	-	-				
Leduc, T.	82	47	35	47	35	100.0	82	2	2	48.8	11	71	-	48	-	-				
Morinville, T.	43	21	22	21	22	100.0	43	1	2	69.8	5	38	-	19	-	-				
St. Albert, T.	193	96	97	94	97	99.0	193	9	9	93.3	7	184	2	83	-	-				
Stony Plain, T.	33	20	13	20	13	100.0	33	1	1	60.6	1	32	-	44	1	-				
Wetaskiwin, C.	110	53	57	53	57	100.0	110	4	9	118.2	7	103	-	89	-	-				
Urban Total	9,797	5,084	4,713	5,072	4,706	99.8	9,793	711	624	136.3	869	9,225	3	5,352	18	35				
Rural Total	1,340	709	631	708	625	99.5	1,337	57	53	82.1	101	1,239	-	318	1	5				
Total	11,137	5,793	5,344	5,780	5,331	99.8	11,130	768	677	129.7	970	10,464	3	5,670	19	40				
Division No. 12																				
Bonnyville, T.	74	36	38	36	38	100.0	74	5	7	162.2	5	68	1	36	-	1				
Cold Lake, T.	32	18	14	18	14	100.0	32	3	-	93.8	5	27	-	10	-	-				
Fort McMurray, T.	194	99	95	99	94	99.5	193	9	11	103.1	25	169	-	38	-	-				
Grand Centre, T.	50	24	26	24	26	100.0	50	1	2	60.0	8	42	-	28	-	-				
Lac La Biche, T.	74	42	32	42	32	100.0	74	14	5	256.8	-	74	-	19	-	-				
St. Paul, T.	106	56	50	56	50	100.0	106	5	9	132.1	7	99	-	62	-	-				
Urban Total	530	275	255	275	254	99.8	529	37	34	134.0	50	479	1	196	-	3				
Rural Total	748	395	353	386	347	98.0	734	83	79	216.6	53	693	2	128	-	6				
Total	1,278	670	608	661	601	98.7	1,263	120	113	182.3	103	1,172	3	324	-	7				
Division No. 13																				
Athabasca, T.	38	22	16	22	16	100.0	38	4	1	131.6	2	36	-	40	-	-				
Barrhead, T.	63	35	28	35	28	100.0	63	1	1	31.7	4	59	-	84	-	-				
Redwater, T.	26	15	11	15	11	100.0	26	3	2	192.3	2	24	-	9	-	-				
Westlock, T.	61	31	30	31	30	100.0	61	2	2	65.6	3	58	-	73	-	-				
Urban Total	188	103	85	103	85	100.0	188	10	6	85.1	11	177	-	206	-	-				
Rural Total	550	272	278	269	277	99.3	546	28	30	105.5	36	514	-	123	-	-				
Total	738	375	363	372	362	99.5	734	38	36	100.3	47	691	-	329	-	2				
Division No. 14																				
Edson, T.	97	56	41	55	41	99.0	97	6	2	82.5	12	85	-	55	1	-				
Hinton, T.	116	52	64	51	64	99.1	116	6	5	94.8	11	105	-	38	-	-				
Whitcourt, T.	103	55	48	55	48	100.0	102	6	4	97.1	4	98	1	36	-	-				
Urban Total	316	163	153	161	153	99.4	315	18	11	91.8	27	288	1	129	1	-				
Rural Total	209	112	97	109	96	98.1	207	14	19	157.9	11	196	2	18	-	-				
Total	525	275	250	270	249	98.9	522	32	30	118.1	38	484	3	147	1	5				
Division No. 15																				
Beaverlodge, T.	19	14	5	13	5	94.7	19	3	-	157.9	1	18	-	17	1	-				
Fairview, T.	45	20	25	20	27	100.0	45	2	3	111.1	3	42	-	40	1	-				
Grande Prairie, C.	326	177	149	177	148	99.7	326	17	15	98.2	27	299	-	180	-	-				
Grimshaw, T.	40	20	20	19	20	97.5	40	4	-	100.0	5	35	-	17	-	1				
High Prairie, T.	73	45	28	45	27	98.6	73	10	8	246.6	5	68	-	17	-	-				
Manning, T.	16	11	5	11	5	100.0	16	-	-	-	-	16	-	13	-	-				
McLennan, T.	26	17	9	17	9	100.0	26	5	2	269.2	5	21	-	17	-	-				
Peace River, T.	151	73	78	73	78	100.0	151	8	8	106.0	10	141	-	58	-	-				
Slave Lake, T.	41	23	18	23	18	100.0	41	3	5	195.1	5	36	-	6	-	-				
Spirit River, T.	12	6	6	6	6	100.0	12	1	-	83.3	1	11	-	6	-	-				
Swan Hills, T.	36	19	17	19	17	100.0	36	-	2	55.6	5	31	-	1	-	-				
Valleyview, T.	72	39	33	38	33	98.6	72	6	6	166.7	9	63	-	32	-	-				
Urban Total	857	464	393	461	391	99.4	857	59	49	126.0	76	781	-	428	2	5				
Rural Total	1,356	682	674	654	643	95.6	1,281	129	131	191.7	109	1,241	6	291	3	6				
Total	2,213	1,146	1,067	1,115	1,034	97.1	2,138	188	180	166.3	185	2,022	6	719	5	11				
Province Urban Total	23,587	12,149	11,438	12,119	11,409	99.7	23,571	1,535	1,413	125.0	2,069	21,507	11	13,390	41	102				
Province Rural Total	8,380	4,324	4,056	4,257	3,986	98.4	8,241	590	544	135.3	611	7,752	17	1,895	7	39				
Province Total	31,967	16,473	15,494	16,376	15,395	99.4	31,818	2,125	1,957	127.7	2,680	29,259	28	15,285	48	141				

TABLE 1  
GENERAL SUMMARY OF VITAL STATISTICS FOR CENSUS DIVISIONS AND  
INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

Census Division or District	Infant Deaths											
	Total Deaths		Deaths in Hospital	Total		Neonatal				Post Neonatal		Maternal Deaths
						Under 7 Days		7 - 27 Days				
	M	F		M	F	M	F	M	F			
Division No. 9												
Banff, T	13	10	18	-	-	-	-	-	-	-	-	
Belleveue, VL.	12	3	11	-	-	-	-	-	-	-	-	
Blairmore, T.	22	14	30	2	2	2	2	-	-	-	-	
Canmore, VL.	11	11	15	1	-	-	-	1	-	-	-	
Coleman, T.	15	9	17	-	-	-	-	-	-	-	-	
Jasper, T.	7	6	7	1	-	-	-	-	-	1	1	
Urban Total	80	53	98	4	2	2	2	1	-	1	1	
Rural Total	30	10	25	3	1	-	-	-	-	3	1	
Total	110	63	123	7	3	2	2	1	-	4	2	
Division No. 10												
Camrose, C.	81	62	100	1	2	1	2	-	-	-	-	
Lloydminster, C.(Pt.)	22	28	38	-	3	-	3	-	-	-	-	
Two Hills, T.	2	-	1	-	-	-	-	-	-	-	-	
Vegreville, T.	33	18	34	-	-	-	-	-	-	-	-	
Vermilion, T.	22	12	30	-	-	-	-	-	-	-	-	
Viking, T	9	15	16	-	-	-	-	-	-	-	-	
Urban Total	169	135	219	1	5	1	5	-	-	-	-	
Rural Total	214	94	226	7	2	5	1	-	-	2	1	
Total	383	229	445	8	7	6	6	-	-	2	1	
Division No. 11												
Devon, T.	5	2	5	-	-	-	-	-	-	-	-	
Drayton Valley, T.	8	5	9	1	1	1	1	-	-	-	-	
Edmonton, C.	1,416	914	1,664	85	64	52	42	8	8	25	14	
Fort Saskatchewan, T.	12	9	18	1	1	1	-	-	-	-	-	
Leduc, T.	20	10	17	-	2	-	2	-	-	-	-	
Morinville, T.	13	6	12	-	2	-	2	-	-	-	-	
St. Albert, T.	23	16	15	-	-	-	-	-	-	-	-	
Stony Plain, T.	15	11	19	-	-	-	-	-	-	-	-	
Wetaskiwin, C.	44	20	48	-	2	-	-	-	1	-	1	
Urban Total	1,556	993	1,807	87	72	54	47	8	9	25	16	
Rural Total	213	98	205	7	9	5	5	-	-	2	4	
Total	1,769	1,091	2,012	94	81	59	52	8	9	27	20	
Division No. 12												
Bonnyville, T.	17	11	22	-	-	-	-	-	-	-	-	
Cold Lake, T.	5	3	3	1	-	1	-	-	-	-	-	
Fort McMurray, T.	10	4	6	3	2	1	-	-	1	2	1	
Grand Centre, T.	9	-	5	-	-	-	-	-	-	-	-	
Lac La Biche, T.	9	8	12	-	1	-	-	-	-	-	1	
St. Paul, T.	14	12	20	3	-	1	-	-	-	2	-	
Urban Total	64	38	68	7	3	3	-	-	1	4	2	
Rural Total	154	82	142	18	9	9	6	1	-	8	3	
Total	218	120	210	25	12	12	6	1	1	12	5	
Division No. 13												
Athabasca, T.	28	11	23	-	-	-	-	-	-	-	-	
Barrhead, T.	25	11	26	1	-	-	-	-	-	1	-	
Redwater, T.	7	3	7	2	-	-	-	1	-	1	-	
Westlock, T.	23	17	31	-	-	-	-	-	-	-	-	
Urban Total	83	42	87	3	-	-	-	1	-	2	-	
Rural Total	155	61	158	8	1	3	1	-	-	5	-	
Total	238	103	245	11	1	3	1	1	-	7	-	
Division No. 14												
Edson, T.	32	17	33	4	4	3	4	1	-	-	-	
Hinton, T.	7	6	10	-	1	-	1	-	-	-	-	
Whitecourt, T.	9	1	5	-	-	-	-	-	-	-	-	
Urban Total	48	24	48	4	5	3	5	1	-	-	-	
Rural Total	41	11	31	-	2	-	1	-	-	-	1	
Total	89	35	79	4	7	3	6	1	-	-	1	
Division No. 15												
Beaverlodge, T.	11	6	15	-	1	-	1	-	-	-	-	
Fairview, T.	19	5	21	-	1	-	1	-	-	-	-	
Grande Prairie, C.	40	30	51	5	3	2	2	1	-	2	1	
Grimshaw, T.	10	2	10	1	-	-	-	-	-	1	-	
High Prairie, T.	17	11	20	2	1	1	-	1	-	-	1	
Manning, T.	1	2	3	1	-	1	-	-	-	-	-	
McLennan, T.	7	7	9	-	1	-	1	-	-	-	-	
Peace River, T.	15	10	21	2	-	2	-	-	-	-	-	
Slave Lake, T.	2	3	5	1	2	1	2	-	-	-	-	
Spirit River, T.	6	3	7	1	1	1	1	-	-	-	-	
Swan Hills, T.	2	1	2	-	-	-	-	-	-	-	-	
Valleyview, T.	9	5	12	3	1	2	1	-	-	1	-	
Urban Total	139	85	176	16	11	10	9	2	-	4	2	
Rural Total	205	117	198	18	16	6	9	3	2	9	5	
Total	344	202	374	34	27	16	18	5	2	13	7	
Province Urban Total	4,483	2,994	5,493	246	186	158	135	23	14	65	37	
Province Rural Total	1,794	841	1,790	109	71	58	36	6	3	45	32	
Province Total	6,277	3,835	7,283	355	257	216	171	29	17	110	69	



TABLE 2  
DEATHS BY PLACE OF OCCURRENCE AND PLACE OF RESIDENCE — 1970

Place of Occurrence	Total Occurrence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Residence					B.C.	Yukon	N.W.T.	U.S.A.	Other
							Ont.	Man.	Sask.	Alta.						
Residence—Total	156,875	3,294	1,015	6,723	4,945	40,392	56,769	7,856	7,472	10,112	17,020	109	254	755	159	
Newfoundland	3,279	3,244	—	7	—	10	4	—	—	—	—	—	1	6	7	
Prince Edward Island	1,018	1	997	1	2	4	5	—	—	—	—	—	—	7	1	
Nova Scotia	6,766	15	9	6,627	42	11	12	—	1	1	1	—	—	38	9	
New Brunswick	4,986	2	2	32	4,830	59	16	1	—	—	2	—	—	39	3	
Quebec	39,918	13	3	14	30	39,606	128	4	2	3	—	—	7	85	23	
Ontario	57,321	17	2	17	10	542	56,150	32	12	11	25	—	—	421	82	
Manitoba	7,903	—	—	—	1	2	69	7,736	37	6	12	—	17	23	—	
Saskatchewan	7,450	—	—	1	—	3	10	29	7,316	58	19	—	—	14	—	
Alberta	10,157	—	1	3	—	5	18	17	57	9,923	64	5	23	30	11	
British Columbia	17,112	—	—	4	3	12	33	16	26	80	16,817	8	—	90	23	
Yukon	103	—	—	—	—	—	1	—	—	—	4	96	—	2	—	
Northwest Territories	217	—	—	1	—	1	1	—	1	6	2	—	205	—	—	
U.S.A.	645	2	1	16	27	137	322	21	20	24	74	—	1	—	—	

TABLE 3

DEATHS AND HOSPITAL DEATHS BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

CENSUS DIVISION	TOTAL DEATHS				DEATHS - HOSPITAL			
	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE
ALBERTA								
01 DIVISION NO. 1								
007 BOW ISLAND, T.	18	19	6	7	15	17	5	7
040 MEDICINE HAT, C.	273	249	47	23	220	188	46	14
047 REDCLIFF, T.	8	18	-	10	-	10	-	10
RURAL	320	323	24	27	235	236	18	19
02 DIVISION NO. 2								
009 BROOKS, T.	31	28	11	8	25	21	9	5
014 COALDALE, T.	16	22	1	7	8	14	-	6
035 LETHBRIDGE, C.	371	324	78	31	311	262	72	23
081 PICTURE BUTTE, T.	8	6	2	-	5	3	2	-
046 RAYMOND, T.	13	17	5	9	11	14	5	8
056 TABER, T.	39	36	11	8	28	25	10	7
RURAL	531	545	50	64	400	410	42	52
03 DIVISION NO. 3								
012 CARDSTON, T.	47	30	25	8	43	25	24	6
013 CLARESHOLM, T.	63	37	35	9	61	36	34	9
025 FORT MACLEOD, T.	41	33	20	12	22	21	12	11
037 MAGRATH, T.	9	9	2	2	7	7	2	2
044 PINCHER CREEK, T.	42	25	26	9	35	25	19	9
RURAL	229	252	41	64	174	196	32	54
04 DIVISION NO. 4								
028 HANNA, T.	43	33	20	10	29	24	14	9
COUNTY	84	98	18	32	51	72	9	30
05 DIVISION NO. 5								
020 DRUMHELLER, C.	86	63	31	8	72	51	28	7
057 THREE HILLS, T.	15	15	7	7	12	12	6	6
060 VULCAN, T.	28	25	12	9	18	18	8	8
RURAL	199	287	20	108	120	210	9	99
06 DIVISION NO. 6								
010 CALGARY, C.	2,599	2,364	388	153	2,008	1,759	323	74
018 DIDSBURY, T.	24	12	19	7	23	9	19	5
030 HIGH RIVER, T.	49	34	24	9	41	26	22	7
042 OLDS, T.	37	32	15	10	30	25	11	6
RURAL	2,815	2,640	327	152	2,135	1,959	259	83
07 DIVISION NO. 7								
065 CASTOR, T.	11	13	5	7	10	10	5	5
076 PROVOST, T.	25	13	17	5	18	10	13	5
053 STETTLER, T.	73	57	25	9	65	47	24	6
061 MAINWRIGHT, T.	55	37	25	7	50	31	24	5
RURAL	267	329	24	86	193	252	15	74
08 DIVISION NO. 8								
031 INNISFAIL, T.	38	37	19	18	32	28	17	13
033 LACOMBE, T.	56	52	19	15	45	39	18	12
045 PONOKA, T.	119	67	61	9	85	35	57	7
048 RED DEER, C.	267	196	99	28	211	149	83	21
072 RIMBEY, T.	24	18	13	7	21	14	13	6
050 ROCKY MOUNTAIN HOUSE, T.	27	27	12	12	23	20	10	7
055 SYLVAN LAKE, T.	7	20	4	17	-	15	-	15
RURAL	627	644	92	109	444	460	74	90
09 DIVISION NO. 9								
087 BANFF, T.	40	23	20	3	25	18	10	3

TABLE 3

DEATHS AND HOSPITAL DEATHS BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

COUNTY, DISTRICT OR CENSUS DIVISION	TOTAL DEATHS				DEATHS - HOSPITAL			
	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE
ALBERTA								
075 BELLEVUE, VL.	2	15	-	13	-	11	-	11
005 BLAIRMORE, T.	6	36	-	30	-	30	-	30
079 CANMORE, VL.	19	22	2	5	13	15	2	4
016 COLEMAN, T.	4	24	-	20	-	17	-	17
088 JASPER, T.	14	13	6	5	7	7	2	2
RURAL	143	173	30	60	89	123	10	44
10 DIVISION NO. 10								
011 CAMROSE, C.	170	143	41	14	124	100	33	9
036 LLOYDMINSTER, C. (PT.)	32	50	10	28	21	38	8	25
085 TWO HILLS, T.	6	2	5	1	6	1	5	-
058 VEGREVILLE, T.	68	51	27	10	53	34	24	5
059 VERMILION, T.	32	34	10	12	25	30	7	12
074 VIKING, T.	40	24	20	4	32	16	18	2
RURAL	559	612	72	125	388	445	49	106
11 DIVISION NO. 11								
017 DEVON, T.	4	7	2	5	2	5	1	4
019 DRAYTON VALLEY, T.	19	13	12	6	16	9	11	4
021 EDMONTON, C.	2,903	2,330	742	169	2,215	1,664	644	93
026 FORT SASKATCHEWAN, T.	23	21	9	7	19	18	8	7
034 Leduc, T.	29	30	10	11	18	17	8	7
086 MORINVILLE, T.	4	19	-	15	-	12	-	12
051 ST. ALBERT, T.	29	39	7	17	4	15	1	12
054 STONY PLAIN, T.	40	26	23	9	28	19	18	9
063 WETASKIWIN, C.	84	64	35	15	66	48	30	12
RURAL	3,268	2,860	569	161	2,429	2,012	506	89
12 DIVISION NO. 12								
006 BONNYVILLE, T.	34	28	11	5	28	22	10	4
015 COLD LAKE, T.	9	8	5	4	5	3	2	-
039 FORT McMURRAY, T.	19	14	8	3	9	6	5	2
066 GRAND CENTRE, T.	3	9	1	7	-	5	-	5
069 LAC LA BICHE, T.	29	17	15	3	23	12	14	3
052 ST. PAUL, T.	41	26	18	3	33	20	15	2
RURAL	279	338	24	83	156	210	9	63
13 DIVISION NO. 13								
001 ATHABASCA, T.	38	39	16	17	23	23	16	16
002 BARRHEAD, T.	49	36	21	8	41	26	20	5
049 REDWATER, T.	2	10	-	8	-	7	-	7
062 WESTLOCK, T.	72	40	42	10	66	31	41	6
RURAL	257	341	34	118	161	245	18	102
14 DIVISION NO. 14								
022 EDSON, T.	42	49	12	19	28	33	11	16
068 HINTON, T.	13	13	6	6	12	10	5	3
077 WHITECOURT, T.	11	10	6	5	8	5	6	3
RURAL	99	124	18	43	48	79	4	35
15 DIVISION NO. 15								
078 BEAVERLODGE, T.	25	17	11	3	23	15	9	1
023 FAIRVIEW, T.	33	24	13	4	30	21	13	4
027 GRANDE PRAIRIE, C.	98	70	45	17	77	51	41	15
067 GRIMSHAW, T.	4	12	2	10	-	10	-	10
029 HIGH PRAIRIE, T.	35	28	14	7	31	20	14	3
080 MANNING, T.	12	3	10	1	12	3	10	1
038 MCLENNAN, T.	22	14	11	3	16	9	10	3
043 PEACE RIVER, T.	49	25	31	7	45	21	29	5
082 SLAVE LAKE, T.	6	5	1	-	6	5	1	-
083 SPIRIT RIVER, T.	14	9	7	2	12	7	6	1
084 SWAN HILLS, T.	1	3	-	2	-	2	-	2
073 VALLEYVIEW, T.	16	14	8	6	13	12	6	5
RURAL	480	546	29	95	305	374	14	83
PROVINCE	10,157	10,112	234	189	7,328	7,283	152	107



TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

[illegible]

TABLE 4

LIST A NO.		CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL															
				C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	
A 21	OTHER BACTERIAL DISEASES	M	7	-	1	-	-	-	-	2	-	-	-	1	3	-	-	-	
		F	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-		
		T	11	-	1	-	-	-	-	2	-	-	-	1	7	-	-	-	
A 22	ACUTE POLIOMYELITIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 23	LATE EFFECTS OF ACUTE POLIOMYELITIS	M	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
		F	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
		T	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	
A 24	SMALLPOX .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 25	MEASLES .....	M	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	
		F	5	-	-	2	-	-	-	-	1	-	-	-	1	-	-	-	
		T	6	-	-	2	-	-	1	-	1	-	-	-	1	-	-	-	
A 26	YELLOW FEVER .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 27	VIRAL ENCEPHALITIS .....	M	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	
A 28	INFECTIOUS HEPATITIS .....	M	4	-	-	1	-	-	1	-	2	-	-	-	-	-	-	-	
		F	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	
		T	5	-	-	1	-	-	2	-	2	-	-	-	-	-	-	-	
A 29	OTHER VIRAL DISEASES .....	M	3	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	
		F	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	
		T	4	-	-	-	-	-	-	-	1	1	-	2	-	-	-	-	
A 30	TYPHUS AND OTHER RICKETTSIOSES	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 31	MALARIA .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 32	TRYPANOSOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 33	RELAPSING FEVER .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SYPHILIS (A34-A37).																			
A 34	CONGENITAL .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 35	EARLY, SYMPTOMATIC .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 36	CENTRAL NERVOUS SYSTEM .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 37	OTHER .....	M	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
TOTAL (A34-A37).				M	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
A 38	GENITOCOCAL INFECTIONS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 39	SCHISTOSOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 40	HYDATIDIOSIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
A 41	FILARIAL INFECTION .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A 42	ANCYLOSTOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 43	OTHER HELMINTHIASES .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 44	ALL OTHER .....	M	4	1	-	-	-	1	1	-	-	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	4	1	-	-	-	1	1	-	-	-	-	1	-	-	-
TOTAL (A1-A44) .....		M	54	1	5	6	-	3	12	-	7	1	1	11	4	1	-
		F	31	-	2	2	-	1	6	-	2	-	-	10	3	-	4
		T	85	1	7	8	-	4	18	-	9	1	1	21	7	1	6
II. NEOPLASMS.																	
MALIGNANT NEOPLASMS (A45-A6C).																	
A 45	BUCCAL CAVITY AND PHARYNX .....	M	20	-	3	2	-	1	6	-	-	1	2	5	-	-	-
		F	6	-	-	-	-	1	1	-	-	-	4	-	-	-	-
		T	26	-	3	2	-	2	7	-	-	1	2	9	-	-	-
A 46	ESOPHAGUS .....	M	24	-	2	-	-	1	6	-	3	-	1	9	-	1	-
		F	7	-	1	-	-	-	3	-	-	-	3	-	-	-	-
		T	31	-	3	-	-	1	9	-	3	-	1	12	-	1	-
A 47	STOMACH .....	M	130	2	11	1	4	3	23	2	14	3	15	36	3	4	3
		F	52	1	1	2	3	2	13	1	2	-	3	18	2	4	-
		T	182	3	12	3	7	5	36	3	16	3	18	54	5	8	6
A 48	INTESTINE, EXCEPT RECTUM .....	M	52	1	4	1	-	8	28	3	6	1	2	25	2	4	2
		F	85	2	5	1	1	3	21	7	5	1	5	21	2	5	2
		T	177	3	9	2	1	11	49	10	11	2	7	46	4	9	4
A 49	RECTUM AND RECTOSIGMOID JUNCTION .....	M	55	-	1	1	-	3	18	2	2	-	4	18	3	3	-
		F	27	-	2	-	-	-	12	1	1	1	1	6	1	1	-
		T	82	-	3	1	-	3	30	3	3	1	5	24	4	4	-
A 50	LARYNX .....	M	6	1	-	-	-	2	1	-	-	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	6	1	-	-	-	2	1	-	-	-	-	1	-	-	-
A 51	TRACHEA, BRONCHUS, AND LUNG .....	M	244	7	11	4	1	3	63	5	13	3	18	74	8	11	7
		F	50	1	3	2	-	3	18	2	1	-	1	14	1	1	2
		T	254	8	14	6	1	6	81	7	14	3	19	88	9	12	9
A 52	BLADDER .....	M	9	1	1	-	-	1	1	-	1	-	-	4	-	-	-
		F	4	-	-	-	-	-	1	-	1	1	-	1	-	-	-
		T	13	1	1	-	-	1	2	-	2	1	-	5	-	-	-
A 53	SKIN .....	M	6	-	1	1	-	-	2	-	1	-	-	1	-	-	-
		F	12	-	-	-	-	1	1	-	1	-	-	9	-	-	-
		T	18	-	1	1	-	1	3	-	2	-	-	10	-	-	-
A 54	BREAST .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	148	5	7	5	1	4	41	2	9	-	7	45	4	6	-
		T	148	5	7	5	1	4	41	2	9	-	7	45	4	6	-
A 55	CERVIX UTERI .....	F	27	1	3	-	-	-	7	1	1	-	2	8	1	-	-
A 56	UTERUS, OTHER .....	F	20	1	-	-	1	1	7	1	-	1	1	2	2	-	1
A 57	PROSTATE .....	M	117	8	7	3	3	4	31	5	2	-	7	35	2	5	1
A 58	OTHER AND UNSPECIFIED SITES.																
A	DIGESTIVE ORGANS AND PERITONEUM (155-159) .....	M	90	2	5	-	-	3	13	4	7	1	6	35	2	6	1
		F	79	2	5	-	2	3	20	4	4	3	5	21	-	1	5
		T	169	4	10	-	2	6	33	8	11	4	11	56	2	7	13
B	RESPIRATORY ORGANS (160, 163) .....	M	4	1	-	-	-	-	1	-	-	-	-	-	-	1	-
		F	3	1	1	-	-	-	1	-	-	-	-	-	-	-	-
		T	7	2	1	-	-	-	2	-	-	-	-	-	-	1	-
C	CONNECTIVE AND OTHER SOFT TISSUE (171) .....	M	7	-	-	-	-	-	3	1	-	1	-	2	-	-	-
		F	6	-	-	-	-	-	1	-	-	-	-	4	1	-	-
		T	13	-	-	-	-	-	4	1	-	1	-	6	1	-	-
D	OVARY, FALLOPIAN TUBE, AND UTERINE LIGAMENT (182) .....	F	52	2	-	-	-	1	15	1	5	1	1	19	3	1	-
E	OTHER AND UNSPECIFIED FEMALE GENITAL ORGANS (184) .....	F	4	-	-	-	-	-	2	-	-	1	-	1	-	-	-



TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
F	OTHER MALE GENITAL ORGANS (186,187) .....	M	8	1	-	1	-	-	2	1	-	-	1	2	-	-	-	-
G	BLADDER (188) .....	M	24	1	-	-	-	-	10	1	1	-	2	6	1	-	-	2
		F	6	1	-	-	-	-	3	-	1	-	-	1	-	-	-	-
		T	30	2	-	-	-	-	13	1	2	-	2	7	1	-	-	2
H	OTHER AND UNSPECIFIED ..... URINARY ORGANS (189)	M	28	1	2	-	-	1	6	1	2	1	1	8	1	1	1	2
		F	18	1	-	1	2	-	2	-	-	1	3	4	2	1	-	1
		T	46	2	2	1	2	1	8	1	2	2	4	12	3	2	1	3
I	BRAIN AND NERVOUS SYSTEM (191,192)	M	33	1	4	2	-	-	7	-	2	1	1	15	-	-	-	-
		F	22	2	4	-	1	1	8	-	-	1	1	3	1	-	-	-
		T	55	3	8	2	1	1	15	-	2	2	2	18	1	-	-	-
J	OTHER .....	M	54	2	2	5	-	2	14	-	2	1	3	12	3	1	5	2
		F	48	-	1	-	1	2	12	2	5	-	2	17	1	2	2	1
		T	102	2	3	5	1	4	26	2	7	1	5	29	4	3	7	3
	TOTAL (A58) .....	M	248	9	13	8	-	6	56	8	14	5	14	80	7	9	7	12
		F	238	9	11	1	6	7	64	7	15	7	12	70	8	5	3	13
		T	486	18	24	9	6	13	120	15	29	12	26	150	15	14	10	25
A 59	LEUKAEMIA .....	M	55	3	3	1	1	1	17	3	2	-	3	13	2	3	1	2
		F	44	3	3	-	1	1	9	-	5	-	1	17	1	1	-	2
		T	99	6	6	1	2	2	26	3	7	-	4	30	3	4	1	4
A 60	OTHER LYMPHATIC AND HAEMATOPOIETIC TISSUE.																	
A 60	LEUKEMIA'S DISEASE (201)	M	9	-	-	-	-	-	2	-	1	-	1	5	-	-	-	-
		F	9	2	-	-	-	2	2	-	-	-	-	3	-	-	-	-
		T	18	2	-	-	-	2	4	-	1	-	1	8	-	-	-	-
B	OTHER .....	M	47	2	3	-	-	2	8	-	5	1	1	16	2	3	1	3
		F	36	2	-	-	-	-	16	1	4	1	1	10	1	-	-	-
		T	83	4	3	-	-	2	24	1	9	2	2	26	3	3	1	3
	TOTAL (A60) .....	M	56	2	3	-	-	2	10	-	6	1	2	21	2	3	1	3
		F	45	4	-	-	-	2	18	1	4	1	1	13	1	-	-	-
		T	101	6	3	-	-	4	28	1	10	2	3	34	3	3	1	3
	TOTAL (A45-A60) .....	M	1062	34	60	22	9	35	262	28	64	14	68	322	29	43	22	50
		F	765	27	36	11	13	25	216	23	45	12	34	231	23	23	9	37
		T	1827	61	96	33	22	60	478	51	109	26	102	553	52	66	31	87
A 61	BENIGN AND UNSPECIFIED .....	M	12	1	-	-	-	-	5	-	1	-	-	2	-	-	-	3
		F	9	1	-	-	-	-	4	-	1	-	-	2	-	1	-	-
		T	21	2	-	-	-	-	9	-	2	-	-	4	-	1	-	3
	TOTAL (A45-A61) .....	M	1074	35	60	22	9	35	267	28	65	14	68	324	29	43	22	53
		F	774	28	36	11	13	25	220	23	46	12	34	233	23	24	9	37
		T	1848	63	96	33	22	60	487	51	111	26	102	557	52	67	31	90
III. ENDOCRINE, NUTRITIONAL, AND METABOLIC DISEASES.																		
A 62	NON-TOXIC GOITRE .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 63	THYROIDITIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	3	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1
		T	3	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1
A 64	DIABETES MELLITUS .....	M	97	4	4	1	1	4	27	3	5	-	6	30	1	5	1	5
		F	98	1	5	1	1	4	35	5	4	2	6	25	3	2	4	4
		T	195	5	9	2	2	8	62	8	9	2	12	55	4	7	1	9
A 65	NUTRITIONAL DEFICIENCY ..... STATES	M	8	-	-	1	-	-	2	-	1	2	1	1	-	-	-	-
		F	8	-	-	3	-	1	2	-	1	-	-	1	-	-	-	-
		T	16	-	-	4	-	1	4	-	2	2	1	2	-	-	-	-
A 66	OTHER .....	M	25	-	2	1	-	1	6	1	-	1	2	5	1	1	-	4
		F	18	-	1	1	-	1	7	-	-	-	-	4	2	1	-	1
		T	43	-	3	2	-	2	13	1	-	1	2	9	3	2	-	5
	TOTAL (A62-A66) .....	M	130	4	6	3	1	5	35	4	6	3	9	36	2	6	1	9
		F	127	1	6	5	1	6	45	5	6	2	6	30	5	3	-	6
		T	257	5	12	8	2	11	80	9	12	5	15	66	7	9	1	15
IV. DISEASES OF BLOOD AND BLOOD-FORMING ORGANS.																		
A 67	ANAEMIAS .....	M	19	1	2	-	-	1	7	-	1	1	1	3	-	1	-	1
		F	15	-	-	1	-	-	7	2	-	-	2	2	1	-	-	-
		T	34	1	2	1	-	1	14	2	1	1	3	5	1	1	-	1

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A 68 OTHER .....	M 4 F 6 T 10	- - -	- 1 1	- - -	- - -	- - -	- - -	2 - 2	- - 1	- - -	- - -	1 1 2	1 2 3	- - -	- - -	- - -	- 1 1
TOTAL (A67,A68) .....	M 23 F 21 T 44	1 - 1	2 1 3	- 1 1	- 1 -	- - -	1 - 1	9 7 16	- 3 3	1 - 1	1 - 1	2 3 5	4 4 8	- 1 1	1 - 1	- - -	1 1 2
V. MENTAL DISORDERS.																	
A 69 PSYCHOSES .....	M 5 F 2 T 7	- - -	1 - 1	- - -	- - -	- - -	- - -	1 1 2	- - -	1 - 1	- - -	- - -	2 - 2	- - -	- - -	- - -	- 1 1
A 70 NEUROSES AND OTHER NON- PSYCHOTIC MENTAL DISORDERS .....	M 23 F 4 T 27	- 1 1	- - -	2 - 2	- - -	- - -	- - -	9 1 10	1 - 1	- - -	1 - 1	- 1 1	9 1 10	- - -	- - -	- - -	1 - 1
A 71 MENTAL RETARDATION .....	M 2 F - T 2	- - -	- - -	- - -	1 - 1	- - -	- - -	- - -	- - -	- - -	- - -	- - -	1 - 1	- - -	- - -	- - -	- - -
TOTAL (A69-A71) .....	M 30 F 6 T 36	- 1 1	1 - 1	2 - 2	1 - 1	- - -	10 2 12	1 - 1	1 - 1	1 - 1	1 - 1	1 1 13	12 1 13	- - -	- - -	- - -	1 1 2
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.																	
A 72 MENINGITIS .....	M 10 F 5 T 15	- - -	- - -	1 1 2	- - -	- - -	- - -	2 1 3	1 - 1	1 1 2	- - -	1 - 1	1 1 2	- - -	1 - 1	- - -	2 1 3
A 73 MULTIPLE SCLEROSIS .....	M 2 F 5 T 7	- 1 1	- - -	- - -	- - -	- - -	- - -	1 2 3	- 1 1	- - -	- - -	1 - 1	- 1 1	- - -	- - -	- - -	- - -
A 74 EPILEPSY .....	M 10 F 4 T 14	- - -	- - -	- - -	- - -	1 - 1	4 1 5	- 1 1	- - -	- - -	- - -	- - -	3 2 5	1 - 1	- - -	- - -	1 - 1
A 75 INFLAMMATORY DISEASES OF EYE .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
A 76 CATARACT .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
A 77 GLAUCOMA .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
A 78 OTITIS MEDIA AND MASTOIDITIS .....	M 1 F 1 T 2	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	1 - 1	- - -	- 1 1	- - -	- - -	- - -	- - -
A 79 OTHER .....	M 30 F 25 T 55	1 1 2	1 - 1	- - -	- 1 1	- - -	8 9 17	4 2 6	3 2 5	- - -	- 1 1	- 8 17	9 1 26	1 1 3	- - -	1 - 1	2 - 6
TOTAL (A72-A79) .....	M 53 F 40 T 93	1 2 3	1 - 1	1 1 2	- 1 1	1 - 1	15 13 28	5 4 9	4 3 7	1 - 1	2 1 3	13 13 26	2 1 3	2 1 3	1 - 1	1 - 1	5 1 6
VII. DISEASES OF THE CIRCULATORY SYSTEM.																	
A 80 ACTIVE RHEUMATIC FEVER.																	
A WITH HEART INVOLVEMENT (391,392.0) .....	M 3 F 3 T 6	- - -	- - -	- - -	- - -	- 1 1	1 1 2	- - -	- - -	- - -	- - -	1 1 2	1 - 1	- - -	- - -	- - -	- - -
B OTHER .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
TOTAL (A80) .....	M 3 F 3 T 6	- - -	- - -	- - -	- - -	- 1 1	1 1 2	- - -	- - -	- - -	- - -	1 1 2	1 - 1	- - -	- - -	- - -	- - -
A 81 CHRONIC RHEUMATIC HEART DISEASE .....	M 37 F 35 T 72	3 - 3	3 6 9	2 1 3	1 - 1	1 2 3	8 9 17	- 2 2	1 - 1	2 - 3	1 3 4	9 8 17	1 - 1	2 - 2	1 - 1	2 - 1	2 3 5

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A	E2 HYPERTENSIVE DISEASE.																
A	WITH HEART INVOLVEMENT ... (400,1,400,5,402,404)	M 23 F 23 T 46	- - -	2 1 3	- - -	- 1 1	- - 1	7 12 19	1 - 1	1 - 1	1 2 3	3 - 3	7 5 12	- - -	1 1 2	- - -	1 1 1
A	OTHER .....	M 12 F 23 T 35	- - -	1 1 2	- 2 2	- 1 1	1 2 3	5 5 10	- 1 1	- - -	- - -	- 2 2	4 6 10	1 - 1	- 1 1	- - -	- 2 2
	TOTAL (A02). ....	M 35 F 46 T 81	- - -	3 2 5	- 2 2	- 2 2	1 2 3	12 17 29	1 1 2	1 - 1	1 2 3	3 2 5	11 11 22	1 - 1	1 2 3	- - -	- 3 3
A	E3 ISCHAEMIC HEART DISEASE ...	M 1873 F 463 T 2776	73 28 101	129 48 177	43 23 66	17 9 26	69 33 102	372 219 591	70 25 95	103 53 156	29 19 48	141 79 220	580 282 862	62 23 85	63 19 82	28 7 35	94 36 130
A	E4 OTHER FORMS OF HEART ..... DISEASE	M 135 F 101 T 236	2 3 5	2 6 8	5 - 5	1 1 2	3 31 4	25 4 56	5 1 9	15 3 24	3 6 6	9 18 15	32 3 50	11 18 14	6 5 11	1 - 1	15 11 26
A	E5 CEREBROVASCULAR DISEASE ...	M 507 F 473 T 580	23 17 40	32 22 54	20 15 35	10 11 25	14 11 24	105 138 243	21 13 34	47 33 80	12 9 21	35 28 63	133 129 262	12 15 27	19 21 40	6 1 7	18 20 38
A	E6 DISEASES OF ARTERIES, ..... ARTERIOLES, AND CAPILLARIES	M 183 F 127 T 310	11 2 13	9 5 14	5 - 5	2 2 4	5 53 98	45 6 13	7 6 15	8 2 7	5 6 15	9 31 84	53 1 1	2 1 3	5 5 10	2 2 4	15 3 18
A	E7 VENOUS THROMBOSIS AND ..... EMBOLISM	M 36 F 21 T 57	1 1 2	1 - 1	- - -	- - 1	1 3 11	8 2 5	3 2 8	5 - -	- - -	1 9 20	11 2 2	- 1 2	4 1 5	- - -	1 - 1
A	E8 OTHER .....	M 3 F 8 T 11	- - -	1 2 3	- - -	- - -	- 3 3	- 1 1	- - -	- - -	- - -	- - -	2 1 3	- - -	- - -	- - -	- 1 1
	TOTAL (A80-A88). ....	M 2812 F 1717 T 4529	113 51 164	180 91 271	75 41 116	31 15 46	94 52 146	576 474 1050	107 54 161	180 105 285	52 36 88	200 125 325	832 489 1321	89 44 133	100 53 153	38 10 48	145 77 222
	VIII. DISEASES OF THE RESPIRATORY SYSTEM.																
A	A9 ACUTE RESPIRATORY ..... INFECTIONS	M 9 F 4 T 13	- - -	2 - 2	- - -	- - 1	1 3 4	- - -	1 - 1	- - -	- - -	- - -	4 - 4	- - -	- - -	- - -	- 1 1
A	A9C INFLUENZA .....	M 45 F 26 T 71	1 1 2	1 1 2	- 1 1	- - -	- 1 11	10 - -	4 - 4	3 2 5	1 - 1	16 12 28	4 3 7	2 1 3	1 1 2	- 1 1	2 2 4
	PNEUMONIA (A91, A92).																
A	A91 VIRAL .....	M 9 F 5 T 14	- - -	- 1 1	- - -	- - -	1 - 1	- - -	1 - 1	- - -	- - -	- - -	3 4 7	1 - 1	- - -	1 - 1	2 - 2
A	A92 OTHER .....	M 185 F 136 T 325	5 5 10	14 5 19	3 2 5	1 - 1	6 3 9	29 36 65	7 12 10	28 3 40	3 1 4	11 9 20	55 37 92	9 9 18	10 4 14	1 - 1	7 10 17
	TOTAL (A91, A92). ....	M 194 F 141 T 339	5 5 10	14 6 20	3 2 5	1 - 1	6 3 9	30 36 66	7 12 10	29 3 41	3 1 4	11 9 20	58 41 99	10 9 19	10 4 14	2 - 2	9 10 19
A	A93 BRONCHITIS, EMPHYSEMA, ..... AND ASTHMA	M 171 F 49 T 220	4 - 4	16 3 19	6 - 6	1 - 1	3 17 69	52 17 69	6 5 11	8 4 12	3 1 4	4 2 6	39 10 49	9 - 9	11 1 12	2 1 3	7 4 11
A	A94 HYPERTROPHY OF TONSILS ..... AND ADENOIDS	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
A	A95 EMPHYEMA AND LUNG ABSCESS	M 4 F 4 T 8	- - -	1 - 1	- - -	- - -	- 1 2	- 1 -	- - 1	- 1 -	- 1 1	- - 3	2 1 -	- - -	- - -	- - -	- - -
A	A96 OTHER .....	M 51 F 38 T 89	1 3 4	4 1 5	- 1 1	- - -	- 14 28	14 - -	2 - 2	4 - 5	1 - 1	2 1 3	19 12 31	1 3 4	2 - 2	- - -	1 2 3
	TOTAL (A89-A96). ....	M 478 F 262 T 740	11 9 20	38 11 49	9 4 13	2 - 2	10 4 14	108 72 180	19 8 27	45 20 65	8 3 11	33 24 57	126 67 193	22 13 35	24 6 30	4 2 6	19 19 38



TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
IX. DISEASES OF THE DIGESTIVE SYSTEM.																	
A 57 DISEASES OF TEETH AND SUPPORTING STRUCTURES	M	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
A 58 PEPTIC ULCER	M	47	1	2	-	1	2	19	2	1	-	3	9	1	2	1	3
	F	11	1	-	-	-	-	6	-	1	-	-	3	-	-	-	-
	T	58	2	2	-	1	2	25	2	2	-	3	12	1	2	1	3
A 55 GASTRITIS AND DUODENITIS	M	5	1	-	-	-	1	-	-	-	-	-	2	-	-	-	1
	F	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
	T	6	1	-	-	-	1	1	-	-	-	-	2	-	-	-	1
A 100 APPENDICITIS	M	7	-	-	-	-	-	5	-	-	-	1	1	-	-	-	-
	F	2	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
	T	9	-	-	-	-	-	6	1	-	-	1	1	-	-	-	-
A 101 INTESTINAL OBSTRUCTION AND FERNIA	M	18	1	2	1	-	-	6	-	1	-	1	5	-	-	-	1
	F	21	-	-	-	-	-	6	2	1	1	2	9	-	-	-	-
	T	39	1	2	1	-	-	12	2	2	1	3	14	-	-	-	1
A 102 CIRRHOSIS OF LIVER	M	64	3	7	-	1	4	21	1	4	1	2	15	1	1	2	1
	F	36	2	1	-	-	1	16	-	2	1	1	10	-	1	-	1
	T	100	5	8	-	1	5	37	1	6	2	3	25	1	2	2	2
A 103 CHOLELITHIASIS AND CHOLECYSTITIS	M	24	-	3	1	-	-	5	-	1	1	4	6	1	1	-	1
	F	28	-	1	1	1	1	7	4	-	-	-	8	1	1	-	3
	T	52	-	4	2	1	1	12	4	1	1	4	14	2	2	-	4
A 104 OTHER	M	45	1	1	1	1	4	16	2	3	2	2	10	-	-	1	1
	F	38	1	3	1	1	1	13	5	2	-	9	-	-	-	-	2
	T	83	2	4	2	2	5	29	7	5	2	2	19	-	-	1	3
TOTAL (A97-A104)	M	211	7	15	3	3	11	73	5	10	4	13	48	3	4	4	8
	F	137	4	5	2	2	3	50	12	6	2	3	39	1	2	-	6
	T	348	11	20	5	5	14	123	17	16	6	16	87	4	6	4	14
X. DISEASES OF THE GENITO- URINARY SYSTEM.																	
A 105 ACUTE NEPHRITIS	M	2	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	2	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
A 106 OTHER NEPHRITIS AND NEPHROSIS	M	23	-	1	1	-	1	6	-	3	1	2	5	-	-	-	3
	F	13	-	-	-	1	1	5	-	-	-	-	5	-	-	-	1
	T	36	-	1	1	1	2	11	-	3	1	2	10	-	-	-	4
A 107 INFECTIONS OF KIDNEY	M	26	-	5	-	-	1	7	1	2	1	-	5	3	1	-	-
	F	25	-	1	1	-	-	6	1	4	-	1	8	-	-	-	3
	T	51	-	6	1	-	1	13	2	6	1	1	13	3	1	-	3
A 108 CALCULUS	M	2	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
	F	3	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
	T	5	-	-	-	-	-	1	-	2	-	-	-	-	2	-	-
A 109 HYPERTROPHIA OF PROSTATE	M	15	1	2	2	-	1	3	-	-	1	-	4	-	1	-	-
A 110 BREAST	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 111 OTHER	M	25	1	2	2	-	-	9	1	2	-	1	3	1	1	1	1
	F	18	1	-	-	-	-	5	1	-	-	3	6	-	1	1	-
	T	43	2	2	2	-	-	14	2	2	-	4	9	1	2	2	1
TOTAL (A105-A111)	M	93	2	10	5	-	3	25	2	9	3	4	17	4	4	1	4
	F	59	1	1	1	1	1	17	2	5	-	4	19	-	2	1	4
	T	152	3	11	6	1	4	42	4	14	3	8	36	4	6	2	8
XI. COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.																	
A 112 TOXAEMIAS	F	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
A 113 HAEMORRHAGE	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 114 ABORTION INDUCED FOR LEGAL INDICATIONS	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 115 OTHER AND UNSPECIFIED ABORTION	F	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
A 116 SEPSIS	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 117 OTHER COMPLICATIONS	F	2	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A 118	DELIVERY WITHOUT MENTION OF COMPLICATION .....	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A112-A118) .....	F	4	-	-	-	-	-	-	1	2	-	-	1	-	-	-
XII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.																	
A 119	INFECTIONS .....	M	2	-	-	1	-	-	1	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	-	1	-	-	1	-	-	-	-	-	-	-	-
A 120	OTHER .....	M	4	-	-	-	-	-	1	-	-	1	-	1	-	-	1
		F	3	-	1	-	-	-	-	-	-	-	1	-	-	-	1
		T	7	-	1	-	-	-	1	-	-	1	1	1	-	-	2
	TOTAL (A119-A120) .....	M	6	-	-	1	-	-	2	-	-	1	-	1	-	-	1
		F	3	-	1	-	-	-	-	-	-	-	1	-	-	-	1
		T	9	-	1	1	-	-	2	-	-	1	1	1	-	-	2
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.																	
A 121	ARTHRITIS AND SPONDYLITIS	M	10	-	2	-	-	-	3	1	-	-	-	2	-	1	1
		F	12	-	-	-	-	-	1	-	-	-	1	5	1	3	-
		T	22	-	2	-	-	-	4	1	-	-	1	7	1	4	2
A 122	RHEUMATISM .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 123	OSTEOMYELITIS AND PERICSTITIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	2	-	-	1	-	-	-	-	-	-	-	-	-	-	1
		T	2	-	-	1	-	-	-	-	-	-	-	-	-	-	1
A 124	ANKYLOSIS AND ACQUIRED MUSCULOSKELETAL DEFORMITIES .....	M	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
		F	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
		T	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-
A 125	OTHER .....	M	6	-	-	-	-	-	3	-	-	1	-	2	-	-	-
		F	7	-	1	1	-	-	2	-	-	1	1	-	1	-	-
		T	13	-	1	1	-	-	5	-	-	1	1	3	-	1	-
	TOTAL (A121-A125) .....	M	17	-	2	-	-	-	6	1	1	-	4	-	1	-	1
		F	22	-	1	2	-	-	4	-	-	2	6	1	4	-	2
		T	39	-	3	2	-	-	10	1	1	1	2	10	1	5	3
XIV. CONGENITAL ANOMALIES.																	
A 126	SPINA BIFIDA .....	M	3	-	-	-	1	-	1	-	-	1	-	-	-	-	-
		F	3	1	-	-	-	-	-	-	1	-	1	-	-	-	-
		T	6	1	-	-	1	-	1	-	1	1	-	1	-	-	-
A 127	OF HEART .....	M	21	1	1	-	1	1	5	1	2	-	-	5	1	1	2
		F	21	-	2	-	-	-	8	-	-	-	2	6	2	-	1
		T	42	1	3	-	1	1	13	1	2	-	2	11	3	1	2
A 128	OTHER ANOMALIES OF CIRCULATORY SYSTEM .....	M	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
		F	4	-	-	-	-	-	1	-	-	-	-	2	-	1	-
		T	5	-	-	-	-	-	2	-	-	-	-	2	-	1	-
A 129	CLEFT PALATE AND CLEFT LIP	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 130	OTHER .....	M	37	1	1	1	-	1	8	3	4	-	1	9	3	2	3
		F	32	-	2	-	-	1	11	2	2	-	1	11	1	-	1
		T	69	1	3	1	-	2	19	5	6	-	2	20	4	2	4
	TOTAL (A126-A130) .....	M	62	2	2	1	2	2	15	4	6	1	1	14	4	3	5
		F	60	1	4	-	-	1	20	2	3	-	3	20	3	1	1
		T	122	3	6	1	2	3	35	6	9	1	4	34	7	4	6
XV. CERTAIN CAUSES OF PERINATAL MORTALITY.																	
A 131	BIRTH INJURY AND DIFFICULT LABOUR .....	M	9	-	-	1	-	-	3	-	-	-	3	2	-	-	-
		F	6	-	1	-	-	1	-	-	-	-	4	-	-	-	-
		T	15	-	1	1	-	1	3	-	-	-	7	2	-	-	-
A 132	CONDITIONS OF PLACENTA AND CORD .....	M	13	-	-	1	-	-	3	-	1	-	1	4	1	-	2
		F	9	-	-	-	-	-	-	-	2	-	5	-	-	-	2
		T	22	-	-	1	-	-	3	-	3	-	1	9	1	-	4
A 133	HAEMOLYTIC DISEASE OF NEWBORN .....	M	8	1	-	-	-	-	1	-	-	-	5	-	-	-	1
		F	4	-	-	1	-	-	1	-	1	-	1	-	-	-	-
		T	12	1	-	1	-	-	2	-	1	-	6	-	-	-	1

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A 134	ANOXIC AND HYPOXIC ..... CONDITIONS NOT ELSEWHERE CLASSIFIED	M F T	59 81 180	2 2 4	5 4 9	3 1 4	1 - 1	1 1 2	24 24 48	4 1 5	8 5 13	- 1 1	3 1 4	35 25 60	3 4 7	2 - 2	1 2 3	7 10 17
A 135	OTHER .....	M F T	70 49 119	- 2 2	2 1 3	1 3 4	4 - 4	1 1 2	25 15 40	2 2 4	4 - 4	3 1 4	2 4 6	13 12 25	3 1 4	2 - 2	2 3 5	6 4 10
	TOTAL (A131-A135) .....	M F T	159 149 348	3 4 7	7 6 13	5 5 11	5 - 5	2 3 5	56 40 96	6 3 9	13 8 21	3 2 5	6 5 11	60 47 107	9 5 14	4 - 4	3 5 8	16 16 32
XVI. SYMPTOMS AND ILL- DEFINED CONDITIONS.																		
A 136	SENILITY WITHOUT MENTION OF PSYCHOSIS	M F T	11 7 18	- - -	- - -	- - -	- - -	- - -	3 2 5	- - -	- 2 -	- - -	- 1 1	7 1 8	- 1 1	- - -	- - -	1 - 1
A 137	SYMPTOMS AND OTHER ILL- DEFINED CONDITIONS	M F T	167 79 246	- - -	1 4 2	5 - 9	- 2 -	2 2 4	111 57 168	1 6 1	6 2 8	7 - 7	2 1 3	19 9 28	3 1 4	6 1 7	- 1 -	4 1 5
	TOTAL (A136, A137) .....	M F T	178 86 264	- - -	1 4 2	5 - 9	- 2 -	2 2 4	114 59 173	1 4 1	6 - 10	7 - 7	2 2 4	26 10 36	3 2 5	6 1 7	- 1 -	5 1 6
XVII. ACCIDENTS, POISONINGS, AND VIOLENCE. EXVII. EXTERNAL CAUSE.																		
ACCIDENTS (AE138-AE146).																		
AE 138 MOTOR VEHICLE ACCIDENTS.																		
A	TRAFFIC (E810-E819) .....	M F T	283 104 387	12 4 16	11 4 15	5 3 8	1 1 2	4 2 6	63 25 88	5 7 12	22 8 30	4 3 7	18 5 23	87 25 112	9 6 15	13 2 15	8 3 11	21 6 27
B	NON-TRAFFIC (E820-E823)	M F T	6 2 8	1 - 1	1 - 1	- - -	- - -	- - -	2 - 2	- - -	- - -	- - -	- - -	2 1 3	- - -	- - -	- - -	1 - 1
	TOTAL (AE138) .....	M F T	289 106 395	13 4 17	12 4 16	5 3 8	1 1 2	4 2 6	65 25 90	5 7 12	22 8 30	4 3 7	18 5 23	89 26 115	9 6 15	13 2 15	8 3 11	21 7 28
AE 139 OTHER TRANSPORT ACCIDENTS.																		
A	CROWDINGS INVOLVING ..... SMALL BOATS (E830.C, E832.C)	M F T	10 - 10	- - -	- - -	- - -	- - -	- - -	3 - 3	- - -	- - -	- - -	2 - 2	3 - 3	- - -	- - -	- - -	2 - 2
B	CROWDINGS INVOLVING OTHER WATERCRAFT (E83C.1- E83C.9, E832.1-E832.9)	M F T	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
C	OTHER TRANSPORT .....	M F T	25 6 31	2 - 2	2 - 2	1 - 1	- - -	- - -	8 3 11	2 2 2	3 - 5	- - 1	1 - 5	4 1 5	- - 1	1 - 1	1 - 1	- - -
	TOTAL (AE139) .....	M F T	35 6 41	2 - 2	2 - 2	1 - 1	- - -	- - -	11 3 14	2 2 2	3 - 5	- - -	3 1 3	7 1 8	- - -	1 - 1	1 - 1	2 - 2
AE 140	ACCIDENTAL POISONING .....	M F T	50 22 72	3 3 6	4 - 4	1 - 1	1 - 1	1 - 1	5 4 9	2 1 3	1 2 3	- 2 -	2 2 4	23 7 30	3 1 4	3 1 4	- 1 1	1 - 1
AE 141	ACCIDENTAL FALLS .....	M F T	85 68 153	- 2 2	6 2 8	4 4 8	1 2 2	3 2 5	25 20 45	2 1 3	4 3 7	1 3 1	3 5 8	21 25 46	4 2 6	7 1 8	- 1 -	4 - 4
AE 142	ACCIDENTS CAUSED BY FIRES	M F T	30 23 53	- - -	2 - 2	- 3 3	- 1 -	- 1 1	4 3 7	1 3 1	3 1 4	1 - 1	- 1 1	5 2 7	2 4 6	2 - 2	- - -	10 8 18
AE 143	ACCIDENTAL DROWNING .....	M F T	44 5 49	1 - 1	3 - 3	1 - 1	- - -	- - -	11 2 13	2 - 2	3 - 3	- - -	3 - 3	10 1 11	7 1 8	- - -	- - -	3 1 4
AE 144	ACCIDENT CAUSED BY FIREARM MISSILES	M F T	16 - 16	2 - 2	- - -	- - -	- - -	- - -	5 - 5	2 - 2	- - -	- - -	3 - -	2 - 2	1 - 1	- - -	- - -	1 - 1
AE 145	ACCIDENTS MAINLY OF INDUSTRIAL TYPE	M F T	68 1 69	2 - 2	2 - 2	3 - 3	2 - 2	1 - 1	14 1 15	1 - 1	5 - 5	2 - 2	1 - 1	13 - 13	3 - 3	9 - 9	- - -	10 - 10



## DIVISION OF VITAL STATISTICS

TABLE 4

CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS (INCLUDING CITIES, TOWNS AND VILLAGES) IN ALBERTA, 1970

LIST A NC.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	CAUSE OF DEATH															
		TOTAL	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
AE 146	ALL OTHER ACCIDENTS .....	M 52	-	2	2	3	1	12	2	5	1	-	9	6	1	3	5
	F 25	-	1	1	-	1	8	-	-	1	1	5	2	1	1	3	5
	T 77	-	3	3	3	2	20	2	5	2	1	14	8	2	4	8	10
	TOTAL (AE138-AE146). ....	M 669	23	33	17	8	10	152	19	46	9	33	179	35	36	12	57
	F 256	9	7	11	2	6	66	9	16	4	14	67	16	5	5	19	69
	T 925	32	40	28	10	16	218	28	62	13	47	246	51	41	17	76	128
AE 147	SUICIDE .....	M 163	2	6	4	1	4	44	2	14	1	8	49	10	4	3	11
	F 50	4	1	2	-	-	14	-	1	-	2	21	1	1	1	2	12
	T 213	6	7	6	1	4	58	2	15	1	10	70	11	5	4	13	23
AE 148	HOMICIDE; LEGAL INTERVENTION .....	M 18	-	1	-	-	-	3	-	-	-	-	12	1	-	-	1
	F 17	-	-	-	-	-	-	3	-	2	-	-	7	-	1	-	4
	T 35	-	1	-	-	-	-	6	-	2	-	-	19	1	1	-	5
AE 149	INJURY UNCERTAIN IF ACCIDENTALLY OR PUR- POSELY INFLICTED .....	M 7	1	1	-	-	-	1	-	2	-	-	2	-	-	-	-
	F 14	2	-	-	-	-	-	5	-	-	-	-	7	-	-	-	-
	T 21	3	1	-	-	-	-	6	-	2	-	-	9	-	-	-	-
AE 150	WAR INJURIES .....	M -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (AE138-AE150).	M 657	26	41	21	9	14	200	21	62	10	41	242	46	40	15	69
	F 337	15	8	13	2	6	88	9	19	4	16	102	17	7	6	25	94
	T 1154	41	49	34	11	20	288	30	81	14	57	344	63	47	21	94	128
XVII. NATURE OF INJURY.																	
AN 138	FRACTURE OF SKULL .....	M 123	8	6	5	1	1	23	2	11	3	10	24	8	8	3	10
	F 37	2	2	1	-	2	12	3	4	-	-	5	-	2	1	3	10
	T 160	10	8	6	1	3	35	5	15	3	10	29	8	10	4	13	23
AN 139	FRACTURE OF SPINE AND TRUNK .....	M 50	3	3	3	1	1	9	3	9	-	3	7	1	1	2	4
	F 16	-	-	2	1	-	4	-	1	-	2	3	1	1	-	1	5
	T 66	3	3	5	2	1	13	3	10	-	5	10	2	2	2	5	10
AN 140	FRACTURE OF LIMBS .....	M 41	-	3	2	-	1	4	3	2	-	3	11	-	4	2	6
	F 59	2	2	2	-	1	18	2	3	-	6	19	1	1	-	2	8
	T 100	2	5	4	-	2	22	5	5	-	9	30	1	5	2	8	20
AN 141	DISLOCATION WITHOUT FRACTURE .....	M -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AN 142	SPRAINS AND STRAINS .....	M 1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
	F -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T 1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
AN 143	INTRACRANIAL INJURY EXCLUDING SKULL FRACTURE .....	M 133	1	4	4	1	3	40	2	12	1	4	34	11	4	2	10
	F 44	3	-	2	-	1	10	1	3	-	1	16	2	1	1	3	10
	T 177	4	4	6	1	4	50	3	15	1	5	50	13	5	3	13	23
AN 144	INTERNAL INJURY .....	M 157	8	7	1	1	4	51	5	8	3	11	71	5	9	2	11
	F 49	1	1	-	-	-	13	1	4	3	3	17	4	-	1	1	12
	T 246	9	8	1	1	4	64	6	12	6	14	88	9	9	3	12	23
AN 145	OPEN WOUNDS .....	M 21	-	1	-	-	-	7	-	-	-	1	9	1	-	1	1
	F 2	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
	T 23	-	1	-	-	-	8	1	-	-	-	1	9	1	-	1	1
AN 146	SUPERFICIAL INJURY, CON- TUSION, AND CRUSHING WITH INTACT SKIN SURFACE .....	M -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F 1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
	T 1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
AN 147	FOREIGN BODY ENTERING THROUGH CRIFICE .....	M 16	-	1	-	1	-	3	-	1	-	-	5	1	-	2	2
	F 11	-	-	1	-	-	5	-	1	-	-	3	1	-	-	-	2
	T 27	-	1	1	1	-	8	-	2	-	-	8	2	-	2	2	4
AN 148	BURN .....	M 40	-	2	-	-	-	8	1	3	1	-	7	2	5	-	11
	F 23	-	-	3	-	-	3	-	1	-	-	1	2	4	-	-	9
	T 63	-	2	3	-	-	11	1	4	1	1	9	6	5	-	20	20
AN 149	EFFECTS OF CHEMICAL SUBSTANCES .....	M 94	5	7	1	1	2	17	2	4	1	3	38	5	5	-	3
	F 58	4	-	2	-	1	15	1	2	-	3	24	2	1	2	1	1
	T 152	9	7	3	1	3	32	3	6	1	6	62	7	6	2	4	4
AN 150	OTHER .....	M 141	1	7	5	3	2	37	3	12	1	6	36	12	4	1	11
	F 37	3	3	-	1	1	7	-	-	1	-	12	2	1	1	5	11
	T 178	4	10	5	4	3	44	3	12	2	6	48	14	5	2	16	22
	TOTAL (AN138-AN150).	M 857	26	41	21	9	14	200	21	62	10	41	242	46	40	15	69
	F 337	15	8	13	2	6	88	9	19	4	16	102	17	7	6	25	94
	T 1154	41	49	34	11	20	288	30	81	14	57	344	63	47	21	94	128
	ALL CAUSES. ....	M 6277	206	371	160	63	183	1523	204	416	110	383	1769	218	238	89	344
	F 3835	117	174	92	35	104	1117	125	228	63	229	1091	120	103	35	202	229
	T 10112	323	545	252	98	287	2640	329	644	173	612	2860	338	341	124	546	553

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
I. INFECTIVE AND PARASITIC DISEASES.															
1	CHOLERA .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
2	TYPHOID FEVER .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
3	PARATYPHOID FEVER AND OTHER SALMONELLA INFECTIONS	M	2	-	-	2	1	-	1	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	-	2	1	-	1	-	-	-	-	-	-
4	BACILLARY DYSENTERY AND AMOEBIASIS	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
5	ENTERITIS AND OTHER DIARRHOEAL DISEASES	M	18	10	2	6	2	-	1	-	3	-	-	-	-
		F	11	5	2	4	2	-	1	-	1	-	-	-	-
		T	29	15	4	10	4	-	2	-	4	-	-	-	-
TUBERCULOSIS (A6-A10).															
6	RESPIRATORY SYSTEM .....	M	7	3	1	3	1	-	-	-	1	-	1	-	-
		F	3	-	-	3	3	-	-	-	-	-	-	-	-
		T	10	3	1	6	4	-	-	-	1	-	1	-	-
7	MENINGES AND CENTRAL NERVOUS SYSTEM	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
8	INTESTINES, PERITONEUM, AND MESENTERIC GLANDS	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
9	BONES AND JOINTS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
10	OTHER .....	M	2	1	1	-	-	-	-	-	-	-	-	-	-
		F	1	-	1	-	-	-	-	-	-	-	-	-	-
		T	3	1	2	-	-	-	-	-	-	-	-	-	-
TOTAL (A6-A10).															
		M	9	4	2	3	1	-	-	-	1	-	1	-	-
		F	4	-	1	3	3	-	-	-	-	-	-	-	-
		T	13	4	3	6	4	-	-	-	1	-	1	-	-
11	PLAGUE .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
12	ANTHRAX .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
13	BRUCELLOSIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
14	LEPROSY .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
15	DIPHTHERIA .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
16	WHOOPING COUGH .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
17	STREPTOCOCCAL SORE THROAT AND SCARLET FEVER	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	1	-	-	1	-	-	-	-	1	-	-	-	-
		T	1	-	-	1	-	-	-	-	1	-	-	-	-



TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 37	OTHER .....	M	1	-	-	1	-	-	1	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	1	-	-	1	-	-	1	-	-	-	-	-	-
	TOTAL (A34-A37) .....	M	1	-	-	1	-	-	1	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	1	-	-	1	-	-	1	-	-	-	-	-	-
A 38	GONOCOCCAL INFECTIONS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 39	SCHISTOSOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 40	HYDATIDOSIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 41	FILARIAL INFECTION .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 42	ANCYLOSTOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 43	OTHER HELMINTHIASES .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 44	ALL OTHER .....	M	4	-	1	3	1	-	1	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	4	-	1	3	1	-	1	-	-	1	-	-	-
	TOTAL (A1-A44) .....	M	54	16	7	31	11	-	11	-	5	1	3	-	-
		F	31	9	7	15	6	-	6	-	2	-	1	-	-
		T	85	25	14	46	17	-	17	-	7	1	4	-	-
II. NEOPLASMS.															
MALIGNANT NEOPLASMS (A45-A60).															
A 45	BUCCAL CAVITY AND PHARYNX .....	M	20	-	6	14	6	1	5	-	2	-	-	-	-
		F	6	-	1	5	1	-	4	-	-	-	-	-	-
		T	26	-	7	19	7	1	9	-	2	-	-	-	-
A 46	ESOPHAGUS .....	M	24	3	2	19	5	1	9	-	2	-	2	-	-
		F	7	1	-	6	3	-	3	-	-	-	-	-	-
		T	31	4	2	25	8	1	12	-	2	-	2	-	-
A 47	STOMACH .....	M	130	50	19	61	20	1	28	-	6	-	3	-	3
		F	52	12	8	32	13	1	14	-	1	1	2	-	-
		T	182	62	27	93	33	2	42	-	7	1	5	-	3
A 48	INTESTINE, EXCEPT RECTUM .....	M	92	27	14	51	26	-	17	1	2	1	2	-	2
		F	85	28	12	45	20	1	19	1	2	1	1	-	-
		T	177	55	26	96	46	1	36	2	4	2	3	-	2
A 49	RECTUM AND RECTOSIGMOID JUNCTION .....	M	55	15	7	33	18	-	14	-	1	-	-	-	-
		F	27	5	3	19	12	-	4	-	2	-	-	-	1
		T	82	20	10	52	30	-	18	-	3	-	-	-	1
A 50	LARYNX .....	M	6	4	-	2	-	-	1	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	6	4	-	2	-	-	1	-	-	1	-	-	-
A 51	TRACHEA, BRONCHUS, AND LUNG .....	M	244	66	30	148	61	3	62	-	7	6	6	-	3
		F	50	15	4	31	16	-	11	-	3	1	-	-	-
		T	294	81	34	179	77	3	73	-	10	7	6	-	3
A 52	BONE .....	M	9	2	1	6	1	-	3	-	1	1	-	-	-
		F	4	-	2	2	1	-	1	-	-	-	-	-	-
		T	13	2	3	8	2	-	4	-	1	1	-	-	-



TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 53	SKIN .....	M	6	1	1	4	2	-	-	-	1	-	-	-	1
		F	12	1	1	10	1	-	8	-	-	-	1	-	-
		T	18	2	2	14	3	-	8	-	1	-	1	-	1
A 54	BREAST .....	M	-	-	-	-	-	-	-	-	-	-	-	-	1
		F	148	34	23	91	39	2	35	1	2	5	5	1	1
		T	148	34	23	91	39	2	35	1	2	5	5	1	1
A 55	CERVIX UTERI .....	F	27	5	5	17	6	1	7	-	1	1	1	-	-
A 56	UTERUS, OTHER .....	F	20	8	4	8	4	1	2	-	-	1	-	-	-
A 57	PROSTATE .....	M	117	29	19	69	27	1	27	2	3	6	1	-	2
A 58	OTHER AND UNSPECIFIED SITES.														
A	DIGESTIVE ORGANS AND PERITONEUM (155-159)	M	90	27	12	51	12	3	29	1	3	2	1	-	-
		F	79	21	18	40	16	1	18	-	2	2	1	-	-
		T	169	48	30	91	28	4	47	1	5	4	2	-	-
B	RESPIRATORY ORGANS (160,163)	M	4	2	-	2	1	-	-	-	-	1	-	-	-
		F	3	-	1	2	1	-	-	-	1	-	-	-	-
		T	7	2	1	4	2	-	-	-	1	1	-	-	-
C	CONNECTIVE AND OTHER SOFT TISSUE (171)	M	7	-	2	5	3	-	2	-	-	-	-	-	-
		F	6	2	-	4	-	-	4	-	-	-	-	-	-
		T	13	2	2	9	3	-	6	-	-	-	-	-	-
D	OVARY, FALLOPIAN TUBE, AND BROAD LIGAMENT (183)	F	52	7	9	36	14	-	18	3	-	1	-	-	-
E	OTHER AND UNSPECIFIED FEMALE GENITAL ORGANS (184)	F	4	-	1	3	2	-	1	-	-	-	-	-	-
F	OTHER MALE GENITAL ORGANS (186,187)	M	8	2	2	4	2	-	2	-	-	-	-	-	-
G	BLADDER (188)	M	24	4	6	14	8	1	4	-	-	1	-	-	-
		F	6	1	1	4	3	-	1	-	-	-	-	-	-
		T	30	5	7	18	11	1	5	-	-	1	-	-	-
H	OTHER AND UNSPECIFIED URINARY ORGANS (189)	M	28	6	8	14	6	-	5	-	2	-	1	-	-
		F	18	9	5	4	1	-	1	1	-	1	-	-	-
		T	46	15	13	18	7	-	6	1	2	1	1	-	-
I	BRAIN AND NERVOUS SYSTEM (191,192)	M	33	4	5	24	7	1	9	-	4	1	2	-	-
		F	22	3	4	15	7	-	2	-	4	1	-	1	-
		T	55	7	9	39	14	1	11	-	8	2	2	1	-
J	OTHER .....	M	54	15	10	29	12	2	11	-	2	1	1	-	-
		F	48	15	8	25	9	-	14	-	1	-	1	-	-
		T	102	30	18	54	21	2	25	-	3	1	2	-	-
	TOTAL (A58) .....	M	248	60	45	143	51	7	62	1	11	6	5	-	-
		F	238	58	47	133	53	1	59	4	8	5	2	1	-
		T	486	118	92	276	104	8	121	5	19	11	7	1	-
A 59	LEUKAEMIA .....	M	55	20	5	30	15	-	9	-	2	2	-	1	1
		F	44	11	5	28	8	-	13	-	1	2	3	-	1
		T	99	31	10	58	23	-	22	-	3	4	3	1	2
A 60	OTHER LYMPHATIC AND HAEMOTOPIC TISSUE.														
A	HODGKIN'S DISEASE (201)	M	9	3	-	6	2	-	4	-	-	-	-	-	-
		F	9	2	1	6	2	-	2	-	-	2	-	-	-
		T	18	5	1	12	4	-	6	-	-	2	-	-	-
B	OTHER .....	M	47	12	10	25	6	-	15	-	3	1	-	-	-
		F	36	6	4	26	14	1	8	-	-	1	-	1	1
		T	83	18	14	51	20	1	23	-	3	2	-	1	1
	TOTAL (A60) .....	M	56	15	10	31	8	-	19	-	3	1	-	-	-
		F	45	8	5	32	16	1	10	-	-	3	-	1	1
		T	101	23	15	63	24	1	29	-	3	4	-	1	1

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

## VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 72	MENINGITIS .....	M	10	6	1	3	2	-	1	-	-	-	-	-	-
		F	5	1	2	2	1	-	1	-	-	-	-	-	-
		T	15	7	3	5	3	-	2	-	-	-	-	-	-
A 73	MULTIPLE SCLEROSIS .....	M	2	-	1	1	1	-	-	-	-	-	-	-	-
		F	5	1	-	4	2	-	1	-	-	1	-	-	-
		T	7	1	1	5	3	-	1	-	-	1	-	-	-
A 74	EPILEPSY .....	M	10	3	1	6	3	-	3	-	-	-	-	-	-
		F	4	1	-	3	1	-	2	-	-	-	-	-	-
		T	14	4	1	9	4	-	5	-	-	-	-	-	-
A 75	INFLAMMATORY DISEASES OF EYE .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 76	CATARACT .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 77	GLAUCOMA .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 78	OTITIS MEDIA AND MASTOIDITIS .....	M	1	-	1	-	-	-	-	-	-	-	-	-	-
		F	1	-	-	1	-	-	1	-	-	-	-	-	-
		T	2	-	1	1	-	-	1	-	-	-	-	-	-
A 79	OTHER .....	M	30	5	4	21	8	-	8	-	1	1	2	1	-
		F	25	6	4	15	7	-	6	-	-	1	1	-	-
		T	55	11	8	36	15	-	14	-	1	2	3	1	-
	TOTAL (A72-A79) .....	M	53	14	8	31	14	-	12	-	1	1	2	1	-
		F	40	9	6	25	11	-	11	-	-	2	1	-	-
		T	93	23	14	56	25	-	23	-	1	3	3	1	-

## VII. DISEASES OF THE CIRCULATORY SYSTEM.

## A 80 ACTIVE RHEUMATIC FEVER.

A	WITH HEART INVOLVEMENT ... (391,392.0)	M	3	1	1	1	1	-	-	-	-	-	-	-	-
		F	3	1	-	2	1	1	-	-	-	-	-	-	-
		T	6	2	1	3	2	1	-	-	-	-	-	-	-

B	OTHER .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-

TOTAL (A80) .....	M	3	1	1	1	1	-	-	-	-	-	-	-	-	-
	F	3	1	-	2	1	1	-	-	-	-	-	-	-	-
	T	6	2	1	3	2	1	-	-	-	-	-	-	-	-

A 81	CHRONIC RHEUMATIC HEART DISEASE ...	M	37	12	4	21	7	-	8	-	2	3	1	-	-
		F	35	4	12	19	6	2	6	2	3	-	-	-	-
		T	72	16	16	40	13	2	14	2	5	3	1	-	-

## A 82 HYPERTENSIVE DISEASE.

A	WITH HEART INVOLVEMENT ... (400.1,400.9,402,404)	M	23	5	5	13	7	-	5	-	1	-	-	-	-
		F	23	3	3	17	11	-	5	-	1	-	-	-	-
		T	46	8	8	30	18	-	10	-	2	-	-	-	-

B	OTHER .....	M	12	2	2	8	4	-	4	-	-	-	-	-	-
		F	23	8	3	12	5	1	5	-	1	-	-	-	-
		T	35	10	5	20	9	1	9	-	1	-	-	-	-

TOTAL (A82) .....	M	35	7	7	21	11	-	9	-	1	-	-	-	-	-
	F	46	11	6	29	16	1	10	-	2	-	-	-	-	-
	T	81	18	13	50	27	1	19	-	3	-	-	-	-	-

A 83	ISCHAEMIC HEART DISEASE ...	M	1373	534	331	1008	217	29	470	9	71	62	27	9	14
		F	907	172	180	551	203	18	245	4	33	23	15	5	5
		T	2776	706	511	1559	520	47	715	13	104	85	42	14	19

A 84	OTHER FORMS OF HEART DISEASE	M	135	46	35	54	22	-	27	1	-	2	2	-	-
		F	101	32	19	50	27	-	14	2	5	2	-	-	-
		T	236	78	54	104	49	-	41	3	5	4	2	-	-

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 85	CEREBROVASCULAR DISEASE ...	M	507	137	103	267	95	5	101	2	16	21	19	2	6
		F	473	79	93	256	132	6	111	6	14	12	11	1	3
		T	980	216	201	563	227	11	212	8	30	33	30	3	9
A 86	DISEASES OF ARTERIES, ..... ARTERIOLES, AND CAPILLARIES	M	183	44	32	107	37	2	47	4	3	10	4	-	-
		F	127	15	24	98	50	3	28	1	2	1	2	-	1
		T	310	59	56	195	87	5	75	5	5	11	6	-	1
A 87	VENOUS THROMBOSIS AND ..... EMBOLISM	M	36	10	5	21	7	-	9	-	-	1	3	-	1
		F	21	6	4	11	3	-	8	-	-	-	-	-	-
		T	57	16	9	32	10	-	17	-	-	1	3	-	1
A 88	OTHER .....	M	3	-	1	2	-	-	2	-	-	-	-	-	-
		F	8	1	-	7	3	-	1	1	2	-	-	-	-
		T	11	1	1	9	3	-	3	1	2	-	-	-	-
TOTAL (A80-A88). ....			M	2812	751	519	1502	497	36	673	16	93	99	56	11
			F	1717	321	343	1053	441	31	423	16	61	38	28	6
			T	4529	1112	862	2555	938	67	1096	32	154	137	84	17
VIII. DISEASES OF THE RESPIRATORY SYSTEM.															
A 89	ACUTE RESPIRATORY ..... INFECTIONS	M	9	4	1	4	1	-	2	-	1	-	-	-	-
		F	4	2	-	2	2	-	-	-	-	-	-	-	-
		T	13	6	1	6	3	-	2	-	1	-	-	-	-
A 90	INFLUENZA .....	M	45	8	10	27	9	14	3	-	-	1	-	-	-
		F	26	3	9	14	1	9	1	1	1	1	-	-	-
		T	71	11	19	41	10	23	4	1	1	2	-	-	-
PNEUMONIA (A91, A92).															
A 91	VIRAL .....	M	9	2	2	5	-	-	3	2	-	-	-	-	-
		F	5	3	-	2	-	-	2	-	-	-	-	-	-
		T	14	5	2	7	-	-	5	2	-	-	-	-	-
A 92	OTHER .....	M	189	62	34	93	23	4	43	1	8	3	7	1	3
		F	136	32	23	81	31	4	28	-	5	4	6	2	1
		T	325	94	57	174	54	8	71	1	13	7	13	3	4
TOTAL (A91, A92). ....			M	198	64	36	98	23	4	46	3	8	7	1	3
			F	141	35	23	83	31	4	30	-	5	4	6	2
			T	339	99	59	181	54	8	76	3	13	7	13	4
A 93	BRONCHITIS, EMPHYSEMA, ..... AND ASTHMA	M	171	39	36	96	46	1	29	1	8	3	5	2	1
		F	49	10	12	27	16	-	9	-	2	-	-	-	-
		T	220	49	48	123	62	1	38	1	10	3	5	2	1
A 94	HYPERTROPHY OF TONSILS ..... AND ADENOIDS	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 95	EMPHYEMA AND LUNG ABSCESS	M	4	-	-	4	1	-	2	-	1	-	-	-	-
		F	4	1	1	2	1	-	-	-	-	-	1	-	-
		T	8	1	1	6	2	-	2	-	1	-	1	-	-
A 96	OTHER .....	M	51	9	6	36	14	-	14	-	2	1	2	1	2
		F	38	8	3	27	14	1	9	-	1	1	-	-	1
		T	89	17	9	63	28	1	23	-	3	2	2	1	3
TOTAL (A89-A96). ....			M	478	124	89	265	94	19	96	4	20	8	14	4
			F	262	59	48	155	65	14	49	1	9	6	7	2
			T	740	183	137	420	159	33	145	5	29	14	21	6
IX. DISEASES OF THE DIGESTIVE SYSTEM.															
A 97	DISEASES OF TEETH AND ..... SUPPORTING STRUCTURES	M	1	-	-	1	1	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	1	-	-	1	1	-	-	-	-	-	-	-	-
A 98	PEPTIC ULCER .....	M	47	15	7	25	16	-	8	-	1	-	-	-	-
		F	11	1	-	10	6	-	3	-	-	1	-	-	-
		T	58	16	7	35	22	-	11	-	1	1	-	-	-





TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 118	DELIVERY WITHOUT MENTION OF COMPLICATION .....	F	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A112-A118). ....	F	4	2	2	-	-	-	-	-	-	-	-	-	-
XII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.															
A 119	INFECTIONS .....	M	2	-	1	1	1	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	1	1	1	-	-	-	-	-	-	-	-
A 120	OTHER .....	M	4	1	1	2	1	-	-	1	-	-	-	-	-
		F	3	1	-	2	-	-	1	-	1	-	-	-	-
		T	7	2	1	4	1	-	1	1	1	-	-	-	-
	TOTAL (A119,A120). ....	M	6	1	2	3	2	-	-	1	-	-	-	-	-
		F	3	1	-	2	-	-	1	-	1	-	-	-	-
		T	9	2	2	5	2	-	1	1	1	-	-	-	-
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.															
A 121	ARTHRITIS AND SPONDYLITIS	M	10	2	3	5	3	-	1	-	1	-	-	-	-
		F	12	2	4	6	1	-	5	-	-	-	-	-	-
		T	22	4	7	11	4	-	6	-	1	-	-	-	-
A 122	RHEUMATISM .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 123	OSTEOMYELITIS AND PERIOSTITIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	2	1	1	-	-	-	-	-	-	-	-	-	-
		T	2	1	1	-	-	-	-	-	-	-	-	-	-
A 124	ANKYLOSIS AND ACQUIRED MUSCULOSKELETAL DEFORMITIES .....	M	1	-	-	1	-	-	-	-	-	-	1	-	-
		F	1	-	-	1	1	-	-	-	-	-	-	-	-
		T	2	-	-	2	1	-	-	-	-	-	1	-	-
A 125	OTHER .....	M	6	1	2	3	3	-	-	-	-	-	-	-	-
		F	7	4	1	2	1	-	-	-	1	-	-	-	-
		T	13	5	3	5	4	-	-	-	1	-	-	-	-
	TOTAL (A121-A125). ....	M	17	3	5	9	6	-	1	-	1	-	1	-	-
		F	22	7	6	9	3	-	5	-	1	-	-	-	-
		T	39	10	11	18	9	-	6	-	2	-	1	-	-
XIV. CONGENITAL ANOMALIES.															
A 126	SPINA BIFIDA .....	M	3	2	-	1	1	-	-	-	-	-	-	-	-
		F	3	1	-	2	-	-	1	-	-	1	-	-	-
		T	6	3	-	3	1	-	1	-	-	1	-	-	-
A 127	OF HEART .....	M	21	8	6	7	4	-	2	-	-	1	-	-	-
		F	21	3	2	16	7	2	4	-	1	-	-	-	2
		T	42	11	8	23	11	2	6	-	1	1	-	-	2
A 128	OTHER ANOMALIES OF CIRCULATORY SYSTEM .....	M	1	-	-	1	1	-	-	-	-	-	-	-	-
		F	4	1	1	2	1	-	1	-	-	-	-	-	-
		T	5	1	1	3	2	-	1	-	-	-	-	-	-
A 129	CLEFT PALATE AND CLEFT LIP	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 130	OTHER .....	M	37	13	8	16	7	-	6	-	-	1	2	-	-
		F	32	10	1	21	8	-	9	-	1	-	2	-	1
		T	69	23	9	37	15	-	15	-	1	1	4	-	1
	TOTAL (A126-A130). ....	M	62	23	14	25	13	-	8	-	-	2	2	-	-
		F	60	15	4	41	16	2	15	-	2	1	2	-	3
		T	122	38	18	66	29	2	23	-	2	3	4	-	3

XV. CERTAIN CAUSES OF  
PERINATAL MORTALITY.

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
A 131	BIRTH INJURY AND DIFFICULT LABOUR	M	9	2	2	5	3	-	2	-	-	-	-	-	-
		F	6	-	1	5	-	-	4	-	1	-	-	-	-
		T	15	2	3	10	3	-	6	-	1	-	-	-	-
A 132	CONDITIONS OF PLACENTA .... AND CORD	M	13	6	1	6	3	1	1	1	-	-	-	-	-
		F	9	3	1	5	-	-	4	-	-	-	1	-	-
		T	22	9	2	11	3	1	5	1	-	-	1	-	-
A 133	HAEMOLYTIC DISEASE OF ..... NEWBORN	M	8	3	-	5	1	-	4	-	-	-	-	-	-
		F	4	1	1	2	1	-	1	-	-	-	-	-	-
		T	12	4	1	7	2	-	5	-	-	-	-	-	-
A 134	ANOXIC AND HYPOXIC ..... CONDITIONS NOT ELSEWHERE CLASSIFIED	M	99	20	10	69	23	-	35	1	4	2	4	-	-
		F	81	17	9	55	23	-	22	2	3	2	3	-	-
		T	180	37	19	124	46	-	57	3	7	4	7	-	-
A 135	OTHER .....	M	70	17	18	35	20	-	13	-	2	-	-	-	-
		F	49	12	12	25	14	1	7	-	1	2	-	-	-
		T	119	29	30	60	34	1	20	-	3	2	-	-	-
	TOTAL (A131-A135). ....	M	199	48	31	120	50	1	55	2	6	2	4	-	-
		F	149	33	24	92	38	1	38	2	5	4	4	-	-
		T	348	81	55	212	88	2	93	4	11	6	8	-	-
XVI. SYMPTOMS AND ILL- DEFINED CONDITIONS.															
A 136	SENILITY WITHOUT MENTION OF PSYCHOSIS	M	11	1	-	10	3	-	7	-	-	-	-	-	-
		F	7	1	4	2	1	-	1	-	-	-	-	-	-
		T	18	2	4	12	4	-	8	-	-	-	-	-	-
A 137	SYMPTOMS AND OTHER ILL- ... DEFINED CONDITIONS	M	167	25	13	129	109	1	13	-	1	-	2	-	3
		F	79	13	3	63	53	1	8	-	-	-	1	-	-
		T	246	38	16	192	162	2	21	-	1	-	3	-	3
	TOTAL (A136,A137). ....	M	178	26	13	139	112	1	20	-	1	-	2	-	3
		F	86	14	7	65	54	1	9	-	-	-	1	-	-
		T	264	40	20	204	166	2	29	-	1	-	3	-	3
XVII. ACCIDENTS, POISONINGS, AND VIOLENCE. EXVII. EXTERNAL CAUSE.															
ACCIDENTS (AE138-AE146).															
AE 138 MOTOR VEHICLE ACCIDENTS.															
A	TRAFFIC (E810-E819) .....	M	283	109	43	131	54	3	59	2	3	5	2	3	-
		F	104	42	21	41	20	1	18	-	1	1	-	-	-
		T	387	151	64	172	74	4	77	2	4	6	2	3	-
B	NON-TRAFFIC (E820-E823)	M	6	1	2	3	2	-	-	-	-	1	-	-	-
		F	2	1	-	1	-	-	1	-	-	-	-	-	-
		T	8	2	2	4	2	-	1	-	-	1	-	-	-
	TOTAL (AE138). ....	M	289	110	45	134	56	3	59	2	3	6	2	3	-
		F	106	43	21	42	20	1	19	-	1	1	-	-	-
		T	395	153	66	176	76	4	78	2	4	7	2	3	-
AE 139 OTHER TRANSPORT ACCIDENTS.															
A	DROWNINGS INVOLVING ..... SMALL BOATS (E830.0, E832.0)	M	10	3	2	5	3	-	2	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	10	3	2	5	3	-	2	-	-	-	-	-	-
B	DROWNINGS INVOLVING OTHER WATERCRAFT (E830.1- E830.9,E832.1-E832.9)	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
C	OTHER TRANSPORT .....	M	25	6	3	16	6	1	3	-	2	2	2	-	-
		F	6	2	1	3	2	-	-	-	-	-	1	-	-
		T	31	8	4	19	8	1	3	-	2	2	3	-	-
	TOTAL (AE139). ....	M	35	9	5	21	9	1	5	-	2	2	2	-	-
		F	6	2	1	3	2	-	-	-	-	-	1	-	-
		T	41	11	6	24	11	1	5	-	2	2	3	-	-

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
AE 140	ACCIDENTAL POISONING .....	M	50	12	10	28	3	-	20	-	2	2	-	1	-
		F	22	5	2	15	4	1	7	-	-	3	-	-	-
		T	72	17	12	43	7	1	27	-	2	5	-	1	-
AE 141	ACCIDENTAL FALLS .....	M	85	25	11	49	24	2	18	2	2	-	1	-	-
		F	68	15	11	42	16	1	20	-	2	2	-	1	-
		T	153	40	22	91	40	3	38	2	4	2	1	1	-
AE 142	ACCIDENTS CAUSED BY FIRES .....	M	30	14	6	10	3	-	4	-	-	-	3	-	-
		F	23	15	4	4	3	-	1	-	-	-	-	-	-
		T	53	29	10	14	6	-	5	-	-	-	3	-	-
AE 143	ACCIDENTAL DROWNING .....	M	44	18	6	20	11	-	8	-	-	1	-	-	-
		F	5	4	-	1	-	-	1	-	-	-	-	-	-
		T	49	22	6	21	11	-	9	-	-	1	-	-	-
AE 144	ACCIDENT CAUSED BY FIREARM MISSILES .....	M	16	9	1	6	4	-	1	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	16	9	1	6	4	-	1	-	-	1	-	-	-
AE 145	ACCIDENTS MAINLY OF INDUSTRIAL TYPE .....	M	68	35	10	23	9	-	11	1	1	1	-	-	-
		F	1	-	-	1	1	-	-	-	-	-	-	-	-
		T	69	35	10	24	10	-	11	1	1	1	-	-	-
AE 146	ALL OTHER ACCIDENTS .....	M	52	24	7	21	9	-	7	1	1	-	2	-	1
		F	25	9	4	12	7	-	5	-	-	-	-	-	-
		T	77	33	11	33	16	-	12	1	1	-	2	-	1
	TOTAL (AE138-AE146) .....	M	669	256	101	312	128	6	133	6	11	13	10	4	1
		F	256	93	43	120	53	3	53	-	3	6	1	1	-
		T	925	349	144	432	181	9	186	6	14	19	11	5	1
AE 147	SUICIDE .....	M	163	54	11	98	36	-	44	3	5	2	7	-	1
		F	50	10	4	36	14	-	18	-	1	1	-	2	-
		T	213	64	15	134	50	-	62	3	6	3	7	2	1
AE 148	HOMICIDE; LEGAL INTERVENTION .....	M	18	4	1	13	3	-	9	-	1	-	-	-	-
		F	17	5	2	10	3	-	7	-	-	-	-	-	-
		T	35	9	3	23	6	-	16	-	1	-	-	-	-
AE 149	INJURY UNDETERMINED IF ACCIDENTALLY OR PUR- POSELY INFLICTED .....	M	7	4	1	2	1	-	-	-	-	1	-	-	-
		F	14	1	3	10	5	-	4	-	-	-	-	-	1
		T	21	5	4	12	6	-	4	-	-	1	-	-	1
AE 150	WAR INJURIES .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (AE138-AE150) .....	M	857	318	114	425	168	6	186	9	17	16	17	4	2
		F	337	109	52	176	75	3	82	-	4	7	1	3	1
		T	1194	427	166	601	243	9	268	9	21	23	18	7	3
NXVII. NATURE OF INJURY.															
AN 138	FRACTURE OF SKULL .....	M	123	44	25	54	20	2	22	1	3	5	1	-	-
		F	37	16	7	14	9	-	4	-	-	1	-	-	-
		T	160	60	32	68	29	2	26	1	3	6	1	-	-
AN 139	FRACTURE OF SPINE AND TRUNK .....	M	50	19	10	21	8	1	6	-	2	1	3	-	-
		F	16	10	3	3	2	-	1	-	-	-	-	-	-
		T	66	29	13	24	10	1	7	-	2	1	3	-	-
AN 140	FRACTURE OF LIMBS .....	M	41	17	7	17	4	2	9	1	1	-	-	-	-
		F	59	13	12	34	14	1	15	-	2	2	-	-	-
		T	100	30	19	51	18	3	24	1	3	2	-	-	-
AN 141	DISLOCATION WITHOUT FRACTURE .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
AN 142	SPRAINS AND STRAINS .....	M	1	-	-	1	1	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	1	-	-	1	1	-	-	-	-	-	-	-	-
AN 143	INTRACRANIAL INJURY EXCLUDING SKULL FRACTURE .....	M	133	51	9	73	34	-	29	3	2	-	4	-	1
		F	44	11	6	27	10	-	15	-	-	-	1	1	-
		T	177	62	15	100	44	-	44	3	2	-	5	1	1



## DIVISION OF VITAL STATISTICS

TABLE 5

CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	RURAL TOTAL	1,000 TO 4,999	5,000 AND OVER	Calgary	Camrose	Edmonton	Grande Prairie	Lethbridge	Medicine Hat	Red Deer	St. Albert	Wetaskiwin
AN 144	INTERNAL INJURY .....	M	197	80	20	97	42	1	42	1	1	5	2	3	-
		F	49	16	9	24	12	1	11	-	-	-	-	-	-
		T	246	96	29	121	54	2	53	1	1	5	2	3	-
AN 145	OPEN WOUNDS .....	M	21	6	2	13	5	-	7	-	1	-	-	-	-
		F	2	1	-	1	1	-	-	-	-	-	-	-	-
		T	23	7	2	14	6	-	7	-	1	-	-	-	-
AN 146	SUPERFICIAL INJURY, CON- TUSION, AND CRUSHING WITH INTACT SKIN SURFACE	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	1	-	-	1	-	-	1	-	-	-	-	-	-
		T	1	-	-	1	-	-	1	-	-	-	-	-	-
AN 147	FOREIGN BODY ENTERING ..... THROUGH ORIFICE	M	16	5	2	9	2	-	5	1	-	-	1	-	-
		F	11	3	1	7	4	-	3	-	-	-	-	-	-
		T	27	8	3	16	6	-	8	1	-	-	1	-	-
AN 148	BURN .....	M	40	19	7	14	6	-	5	-	-	-	3	-	-
		F	23	15	3	5	3	-	2	-	-	-	-	-	-
		T	63	34	10	19	9	-	7	-	-	-	3	-	-
AN 149	EFFECTS OF CHEMICAL ..... SUBSTANCES	M	94	24	14	56	13	-	32	1	4	4	1	1	-
		F	58	13	5	40	15	1	20	-	-	3	-	1	-
		T	152	37	19	96	28	1	52	1	4	7	1	2	-
AN 150	OTHER .....	M	141	53	18	70	33	-	29	1	3	1	2	-	1
		F	37	11	6	20	5	-	10	-	2	1	-	1	1
		T	178	64	24	90	38	-	39	1	5	2	2	1	2
TOTAL (AN138-AN150).		M	857	318	114	425	168	6	196	9	17	16	17	4	2
		F	337	109	52	176	75	3	82	-	4	7	1	3	1
		T	1194	427	166	601	243	9	268	9	21	23	18	7	3
ALL CAUSES. ....		M	6277	1794	1032	3451	1346	81	1416	40	206	164	131	23	44
		F	3835	841	666	2328	1018	62	914	30	118	85	65	16	20
		T	10112	2635	1698	5779	2364	143	2330	70	324	249	196	39	64

TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

[illegible]







DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

[illegible]

TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

[illegible]



TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

[illegible]

TABLE 6  
DEATHS BY CAUSE AND SEX, BY AGE, ALBERTA, 1970

TABLE 6

[illegible]





TABLE 7  
DEATHS BY CAUSE AND SEX, BY AGE, EDMONTON, 1970

TABLE 7

DEATHS BY CAUSE AND SEX, BY AGE, EDMONTON, 1970









TABLE 7  
DEATHS BY CAUSE AND SEX, BY AGE, EDMONTON, 1970



TABLE 7  
DEATHS BY CAUSE AND SEX, BY AGE, EDMONTON, 1970

[illegible]





TABLE 8  
DEATHS BY CAUSE AND SEX, BY AGE, CALGARY, 1970

TABLE 8  
DEATHS BY CAUSE AND SEX, BY AGE, CALGARY, 1970

TABLE 8

[illegible]



TABLE 8  
DEATHS BY CAUSE AND SEX, BY AGE, CALGARY, 1970

[illegible]





TABLE 8

[illegible]



TABLE 8  
DEATHS BY CAUSE AND SEX, BY AGE, CALGARY, 1970

LIST A NO.	A INTERMEDIATE LIST A (YELLOW REVISION)	CAUSE OF DEATH	AGE - AGE										AGE - AGE										85+ N.S.			
			TOTAL	28+ DAYS	7-27 DAYS	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		70-74	75-79	80-84
A 116	DELIVERY WITHOUT MECHAN OF CERVICAL	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	TOTAL (A112-A181) *****	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
XIII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.																										
A 119	INFECTIONS	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
A 120	OTHER	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
	TOTAL (A119-A120) *****	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.																										
A 121	ARTHRITIS AND SPONDYLITIS	M	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
A 122	RHEUMATISM	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 123	CYSTICERCELLOSIS AND PERIOSTITIS	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 124	ANKYLOSIS AND ACQUIRED MUSCULOSKELETAL DEFORMITIES	M	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 125	OTHER	M	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		
		F	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
	TOTAL (A121-A125) *****	F	9	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
XIV. CONGENITAL ANOMALIES.																										
A 126	SPINA BIFIDA	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 127	OF HEART	M	4	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	7	1	1	2	3	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	11	2	1	4	7	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 128	OTHER ANOMALIES OF CIRCULATORY SYSTEM	M	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 129	CLEFT PALATE AND CLEFT LIP	M	2	1	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 130	OTHER	M	7	4	-	-	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	8	7	1	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	15	11	1	2	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	16	8	-	-	10	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	TOTAL (A126-A130) *****	F	29	14	2	7	23	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
XV. CERTAIN CAUSES OF PERINATAL MORTALITY.																										
A 131	BIRTH INJURY AND DIFFICULT LABOUR	M	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 132	CONDITIONS OF PLACENTA AND CORD	M	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
A 133	HAEMOLYTIC DISEASE OF NEWBORN	M	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		F	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

TABLE 8

LIST NC.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL	7-27 DAYS JOURS	28+ DAYS JOURS	TOTAL YEAR-AN	AGE - AGE					AGE - AGE													
						1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
A 134	ANALOG AND HYPERIC CONDITIONS NOT ELSEWHERE CLASSIFIED	23 23 46	21 23 46	2 2 2	23 23 46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 135	CTER	20 14 34	19 14 33	1 1 1	20 14 34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A133-A135), ....	50 38 88	47 38 83	2 2 2	50 38 88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XVI. SYMPTOMS AND ILL- DEFINING CONDITIONS.																							
A 136	SENSITIVITY WITHOUT MENTICA OF PSYCHOSIS	3 1 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 137	SYMPTOMS AND OTHER ILL- DEFINING CONDITIONS	109 23 132	-	1 6 7	5 2 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A136-A137), ....	112 26 138	-	1 6 7	5 2 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	XVII. ACCIDENTS, PERSONS, ENVIRONMENTAL CAUSE, ACCIDENTS (A138-A146).																							
A 138	MOTOR VEHICLE ACCIDENTS.																							
A	TRAFFIC (E810-E815) .....	54 20 74	-	1 1 2	1 1 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	NON-TRAFFIC (E820-E823)	2 2 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A138), .....	56 22 78	-	1 1 2	1 1 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 139	CTER TRANSPORT ACCIDENTS.																							
A	DRAGINGS INVOLVING .....	3 3 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	DRAGINGS INVOLVING CTER WATERCRAFT (E830- E835) (E836-E839)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	CTER TRANSPORT .....	6 2 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A139), .....	9 5 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 140	ACCIDENTAL POISONING	3 7 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 141	ACCIDENTAL FALLS	24 16 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 142	ACCIDENTS CAUSED BY FIRES	3 3 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 143	ACCIDENTAL DROWNING	11 11 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 144	ACCIDENT CAUSED BY FIREARMS MISSILES	4 4 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 145	ACCIDENTS MAINLY OF INDUSTRIAL TYPE	9 1 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 8  
DEATHS BY CAUSE AND SEX, BY AGE, CALGARY, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)	TOTAL DAYS 7-27 DAYS 28+	AGE - AGE				TOTAL DAYS 15-19 20-24 25-29	AGE - AGE				TOTAL DAYS 45-49 50-54 55-59	AGE - AGE				TOTAL DAYS 65-69 70-74 75-79	TOTAL DAYS 80-84 85+
			1	2	3	4		5	6	7	8		9	10	11	12		
AE 146	ALL OTHER ACCIDENTS .....	9	1	1	1	2	4	1	1	1	1	1	1	1	1	1	1	
		16	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	
	TOTAL (AE138-AE146) .....	125	1	1	1	7	5	1	1	1	1	1	1	1	1	1	1	
		181	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AE 147	SUICIDE .....	36	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		14	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
	TOTAL (AE147) .....	50	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AE 148	HOMICIDE; LEGAL INTERVENTION .....	3	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		6	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AE 149	INJURY UNDETERMINED IF ACCIDENTALLY OR PURPOSELY INFlicted .....	1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		5	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AE 150	WAR INJURIES .....	1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
	TOTAL (AE138-AE150) .....	168	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		243	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
NXXVII. NATURE OF INJURY.																		
AN 138	FRacture OF SKULL .....	20	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		29	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 139	FRacture OF SPINE AND TRUNK .....	8	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		10	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 140	FRacture OF LIMBS .....	4	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		14	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 141	DISLOCATION WITHOUT FRACTURE .....	1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 142	SPRAINS AND STRAINS .....	1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 143	INTRACRANIAL INJURY EXCLUDING SKULL FRACTURE .....	34	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		40	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 144	INTERNAL INJURY .....	12	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		54	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 145	OPEN WOUNDS .....	6	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		6	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 146	SUPERFICIAL INJURY, CONTUSION, AND CRUSHING WITH IMPACT SKIN SURFACE .....	1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		1	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 147	FOREIGN BODY ENTERING THROUGH DRIFICE .....	2	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		6	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 148	BURN .....	6	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		9	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 149	EFFECTS OF CHEMICAL SUBSTANCES .....	13	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		28	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
AN 150	CUTTER .....	3	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		38	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
	TOTAL (AN138-AN150) .....	168	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
		243	1	1	1	5	7	1	1	1	1	1	1	1	1	1	1	
ALL CAUSES. ....																		
		1,346	55	8	24	87	1	2	5	2	7	1	1	1	1	1	1	
		1,018	48	13	48	102	1	2	5	2	7	1	1	1	1	1	1	
		420	13	13	33	33	1	1	1	1	1	1	1	1	1	1	1	
		346	13	13	33	33	1	1	1	1	1	1	1	1	1	1	1	
		420	13	13	33	33	1	1	1	1	1	1	1	1	1	1	1	





TABLE 9



TABLE 9

[illegible]

TABLE 9  
DEATHS BY CAUSE, BY MARITAL STATUS, AGE AND SEX, ALBERTA, 1970

[illegible]



TABLE 9  
DEATHS BY CAUSE, BY MARITAL STATUS, AGE AND SEX, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST, A (EIGHTH REVISION)	TOTAL	UNDER 15 YEARS DE 15				SINGLE CELIBITARY				MARRIED MARIÉ				MARRIED MARIÉ				WIDOWED AND DIVORCED EN VEUVAGE ET DIVORCÉ				NOT STATED	
			15-24	25-44	45-64	65-74	75+	N.S.	TOTAL	15-24	25-44	45-64	65-74	75+	N.S.	TOTAL	15-24	25-44	45-64	65-74	75+	N.S.	NON DONNÉES	
A 82 HYPERTENSIVE DISEASE.																								
A	WITH HEART INVOLVEMENT *** (400-1,400,5,402,404)	23	5	1	2	2	1	1	13	1	1	4	2	6	1	5	1	1	1	1	4	1	1	
M		23	5	1	2	2	1	1	13	1	1	4	2	6	1	5	1	1	1	1	4	1	1	
F		23	5	1	2	2	1	1	19	1	1	4	3	10	1	22	1	1	1	6	15	1	1	
B OTHER																								
M		12	2	1	1	1	1	1	8	2	3	3	3	3	3	2	1	1	1	2	13	1	1	
F		23	2	1	1	1	1	1	15	1	3	6	6	6	6	18	1	1	1	2	15	1	1	
T		35	2	1	1	1	1	1	15	1	3	6	6	6	6	18	1	1	1	2	15	1	1	
TOTAL (A82).																								
M		35	7	1	2	2	2	2	21	3	7	2	9	9	7	7	1	1	1	6	1	1	1	
F		46	7	1	2	2	2	2	34	1	4	1	1	16	40	33	2	7	24	8	30	1	1	
T		81	7	1	2	2	2	2	34	1	4	1	1	16	40	33	2	7	24	8	30	1	1	
A 83 ISCHEMIC HEART DISEASE ***																								
M		1,873	260	8	62	78	115	1,222	40	414	361	407	386	407	386	294	35	57	294	1	1	1	1	
F		903	32	10	17	10	135	1,051	6	460	410	458	460	458	460	294	29	103	433	1	1	1	1	
T		2,776	292	8	69	89	130	1,927	46	874	771	865	846	865	846	598	64	160	727	2	2	2	2	
A 84 OTHER FORMS OF HEART DISEASE																								
M		135	4	32	1	3	6	5	55	1	5	12	14	23	43	63	2	1	1	39	1	1	1	
F		101	4	32	1	3	6	5	36	1	4	9	8	14	40	60	2	1	1	55	1	1	1	
T		236	5	36	1	4	7	18	91	2	9	21	22	37	103	123	2	2	5	94	1	1	1	
A 85 CEREBROVASCULAR DISEASE ***																								
M		507	1	56	1	11	11	33	305	1	8	44	97	156	143	143	1	1	16	126	1	1	1	
F		473	1	73	1	1	14	43	451	1	21	84	131	213	182	182	1	1	13	64	574	1	1	
T		980	2	73	1	1	14	43	451	2	21	84	131	213	182	182	2	2	29	190	598	2	2	
A 86 DISEASES OF ARTERIES, ARTERIOLES, AND CAPILLARIES																								
M		127	15	2	2	3	12	123	123	1	2	21	21	58	63	63	1	1	11	83	1	1	1	
F		127	9	1	1	1	5	23	23	1	2	7	4	10	95	95	1	1	6	57	1	1	1	
T		310	24	3	3	4	17	126	126	2	4	28	25	68	158	158	2	2	17	140	2	2	2	
A 87 VENOUS THROMBOSIS AND EMBOLISM																								
M		36	3	1	1	2	1	2	25	1	1	7	7	10	8	8	1	1	1	5	1	1	1	
F		21	3	1	1	2	1	2	33	1	2	8	8	14	21	21	1	1	2	16	1	1	1	
T		57	6	2	2	3	2	3	58	2	3	15	15	24	29	29	2	2	3	21	2	2	2	
A 88 OTHER																								
M		3	2	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
F		8	2	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
T		11	2	1	1	1	1	1	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
TOTAL (A80-A89).																								
M		2,812	5	383	4	12	89	98	180	1	42	515	511	667	657	657	4	38	83	532	1	1	1	
F		1,717	4	364	1	14	17	31	561	1	30	157	155	215	215	215	1	49	177	860	1	1	1	
T		4,529	9	747	5	13	103	115	211	2	72	672	666	882	872	872	5	87	260	1,392	2	2	2	
VIII. DISEASES OF THE RESPIRATORY SYSTEM.																								
A 89 ACUTE RESPIRATORY INFECTIONS																								
M		9	5	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
F		13	7	1	1	1	1	1	3	1	1	2	2	1	2	2	1	1	2	2	1	1	1	
T		22	12	2	2	2	2	2	5	2	2	3	3	2	3	3	2	2	3	3	2	2	2	
A 90 INFLUENZA																								
M		45	17	2	4	11	16	16	16	1	2	3	10	10	12	12	1	1	2	10	1	1	1	
F		26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
T		71	18	3	5	12	17	17	17	2	3	4	21	21	23	23	2	2	3	21	2	2	2	
PNEUMONIA (A91, A92).																								
A	91 VIRAL	9	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
M		5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
F		14	10	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
A 92 OTHER																								
M		189	25	40	1	6	11	22	80	4	7	17	52	53	43	43	4	17	3	40	1	1	1	
F		136	33	10	2	4	13	33	33	2	3	10	22	23	23	23	1	1	1	1	1	1	1	
T		325	58	50	3	10	12	23	93	6	10	27	74	76	66	66	5	18	4	41	2	2	2	
TOTAL (A91, A92).																								
M		198	32	61	1	3	4	12	23	5	8	15	42	43	33	33	4	7	4	74	1	1	1	
F		171	33	10	2	4	10	13	25	2	3	6	16	17	17	17	1	1	1	1	1	1	1	
T		339	68	52	3	4	10	13	25	7	11	21	58	60	50	50	5	18	5	85	2	2	2	
A 93 BRONCHITIS, EMPHYSEMA, AND ASTHMA																								
M		171	5	23	2	5	12	4	104	1	2	23	42	39	37	37	1	1	5	31	1	1	1	
F		49	2	17	1	1	1	1	15	1	1	4	4	4	4	4	1	1	1	1	1	1	1	
T		220	7	25	3	6	12	5	125	2	3	27	46	43	41	41	2	2	6	32	2	2	2	
A 94 HYPERTROPY OF TONSILS AND ADENOTIS																								
M		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
F		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
T		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
A 95 EMPHYSEMA AND LUNG ABSCESS																								
M		4	—	—	—	—	—	—	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
F		4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
T		8	—	—	—	—	—	—	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
A 96 OTHER																								
M		51	3	11	1	2	3	5	23	1	2	3	6	10	5	14	2	1	2	9	1	1	1	
F		38	4	2	1	1	1	1	14	1	3	6	1	4	4	18	1	1	2	3	12	1	1	
T		89	7	13	1	2	3	5	37	2	5	9	12	11	18	32	3	2	3	21	2	2	2	
TOTAL (A90-A96).																								
M		478	46	93	1	4	15	32	42	—	23	45	33	108	107	107	2	2	12	91	1	1	1	
F		240	89	109	1	8	21	33	46	—	17	62	86	124	124	124	9	9	26	214	1	1	1	
T		718	135	202	2	12	36	65	88	—	40	107	119	232	231	231	11	11	38	305	2	2	2	

TABLE 9  
DEATHS BY CAUSE, BY MARITAL STATUS, AGE AND SEX, ALBERTA, 1970

[illegible]

XI. COMPLICATIONS OF  
REGNANCY, CHILDBIRTH,  
AND THE PUERPERIUM.

EMIAS .....

DEATHS BY CAUSE, BY MARITAL STATUS, AGE AND SEX, ALBERTA, 1970

[illegible]

TABLE 9  
DEATHS BY CAUSE, BY MARITAL STATUS, AGE AND SEX, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH IMMEDIATE REASON (EIGHTH REVISION)	TOTAL	UNDER 15			SINGLE CELIBITARY					MARRIED MARIE			MARRIED MARIE			WIDOWED AND DIVORCED EN VEUVAGE ET DIVORCE			NOT STATED	
			15-24	25-44	45-64	65-74	75+	N.S.	TOTAL	15-24	25-44	45-64	65-74	75+	N.S.	TOTAL	15-24	25-44	45-64		65-74
A 134 ANOXIC AND HYPOXIC CONDITIONS NOT ELSEWHERE CLASSIFIED																					
M	99	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	81	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	180	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 135 OTHER																					
M	70	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	49	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	119	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL (A131-A135)																					
M	199	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	149	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	348	348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
XVI. SYMPTOMS AND ILL- DEFINED CONDITIONS.																					
A 136 SENILITY WITHOUT MENTION OF PSYCHOSIS																					
M	11	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	18	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A 137 SYMPTOMS AND OTHER ILL- DEFINED CONDITIONS																					
M	167	17	37	2	3	7	12	13	-	71	7	27	18	19	-	1	7	7	24	3	-
F	79	8	9	2	-	2	1	4	-	21	1	6	10	-	-	1	7	4	34	-	-
T	246	25	46	4	3	9	13	17	-	92	8	33	28	19	-	2	14	11	58	3	-
TOTAL (A136-A137)																					
M	178	17	40	2	3	7	12	16	-	74	7	27	18	22	-	44	29	1	7	29	-
F	86	8	9	2	-	1	6	10	-	21	1	6	10	-	-	3	4	41	-	-	-
T	264	25	49	4	3	8	13	26	-	95	8	33	28	22	-	47	33	5	41	29	-
XVII. ACCIDENTS, POISONINGS, AND VIOLENCE.																					
EXVII. EXTERNAL CAUSE.																					
ACCIDENTS (A138-A146).																					
AE 139 MOTOR VEHICLE ACCIDENTS.																					
A TRAFFIC (E810-E819)																					
M	283	27	127	96	25	3	2	1	-	115	12	34	49	12	8	3	7	4	2	-	-
F	104	9	32	27	4	1	-	-	-	39	1	16	18	2	2	-	1	4	6	-	-
T	387	36	159	123	29	4	2	1	-	154	13	50	67	14	10	-	8	10	8	-	-
B NON-TRAFFIC (E820-E823)																					
M	6	1	2	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
F	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	8	2	3	3	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
TOTAL (A138)																					
M	289	27	129	98	25	3	2	1	-	118	12	34	52	12	8	3	7	5	2	-	-
F	106	10	33	28	4	1	-	-	-	42	1	16	18	2	2	-	1	4	6	-	-
T	395	37	162	126	29	4	2	1	-	160	13	50	70	14	10	-	8	11	8	-	-
AE 139 OTHER TRANSPORT ACCIDENTS.																					
A DROWNINGS INVOLVING SMALL BOATS (E830-0)																					
M	10	3	2	1	1	-	-	-	-	5	1	2	2	-	-	-	-	-	-	-	-
F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	10	3	2	1	1	-	-	-	-	5	1	2	2	-	-	-	-	-	-	-	-
B DROWNINGS INVOLVING OTHER VESSELS (E830-1- E830-9; E832-1-E832-9)																					
M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C OTHER TRANSPORT																					
M	25	1	8	4	4	-	-	-	-	14	-	7	6	-	1	1	1	1	1	-	-
F	91	2	9	5	4	-	-	-	-	18	-	11	6	-	1	1	1	1	1	-	-
T	116	3	17	9	8	-	-	-	-	32	-	18	12	-	2	2	2	2	2	-	-
TOTAL (A139)																					
M	35	4	10	5	5	-	-	-	-	19	1	9	8	-	1	1	1	1	1	-	-
F	6	1	1	1	1	-	-	-	-	4	1	4	4	-	1	1	1	1	1	-	-
T	41	5	11	6	6	-	-	-	-	23	2	13	12	-	2	2	2	2	2	-	-
AE 140 ACCIDENTAL POISONING																					
M	50	2	21	14	5	-	2	-	-	25	2	7	14	2	2	-	2	-	-	-	-
F	22	2	4	3	-	1	-	-	-	13	2	1	4	-	-	-	-	-	-	-	-
T	72	4	25	17	5	1	2	-	-	38	4	8	18	2	2	-	2	-	-	-	-
AE 141 ACCIDENTAL FALLS																					
M	85	9	12	3	2	4	-	3	-	47	-	12	13	6	16	-	3	1	11	-	-
F	68	9	13	3	2	4	-	3	-	19	-	2	3	5	9	-	5	5	51	-	-
T	153	18	25	6	4	8	-	6	-	66	-	14	16	11	25	-	8	6	62	-	-
AE 142 ACCIDENTS CAUSED BY FIRES																					
M	30	12	12	3	1	4	1	3	-	4	-	2	-	-	-	-	1	1	1	-	-
F	53	11	7	8	1	4	1	3	-	9	-	3	-	-	-	-	1	1	1	-	-
T	83	23	19	11	5	5	2	6	-	13	-	5	-	-	-	-	2	2	2	-	-
AE 143 ACCIDENTAL DROWNING																					
M	44	15	21	15	6	-	-	-	-	7	-	6	1	-	-	-	-	-	-	-	-
F	22	4	11	6	-	-	-	-	-	8	-	2	-	-	-	-	-	-	-	-	-
T	66	19	32	21	6	-	-	-	-	15	-	8	1	-	-	-	-	-	-	-	-
AE 144 ACCIDENT CAUSED BY FIREARM MISSILES																					
M	16	5	6	3	2	1	-	-	-	3	2	1	-	-	-	-	-	-	-	-	-
F	16	5	6	3	2	1	-	-	-	5	2	1	-	-	-	-	-	-	-	-	-
T	32	10	12	6	4	2	-	-	-	8	4	2	-	-	-	-	-	-	-	-	-
AE 145 ACCIDENTS MAINLY OF INDUSTRIAL TYPE																					
M	68	12	21	15	4	2	-	-	-	34	2	14	16	1	1	-	-	-	-	-	-
F	1	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
T	69	13	21	15	4	2	-	-	-	36	2	14	16	1	1	-	-	-	-	-	-





TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST NO.	A	CAUSE OF DEATH INTERMEDIATE LIST A ( EIGHTH REVISION)	TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. INFECTIVE AND PARASITIC DISEASES.															
A	1	CHOLERA .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	2	TYPHOID FEVER .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	3	PARATYPHOID FEVER AND OTHER SALMONELLA INFECTIONS	M	2	-	-	-	1	1	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	2	-	-	-	1	1	-	-	-	-	-	-
A	4	BACILLARY DYSENTERY AND ... AMOEBIASIS	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	5	ENTERITIS AND OTHER ..... DIARRHOEAL DISEASES	M	18	3	2	1	-	-	1	-	2	2	-	4
			F	11	1	1	1	-	1	1	-	3	1	1	-
			T	29	4	3	2	-	1	2	-	5	3	1	5
TUBERCULOSIS (A6-A10).															
A	6	RESPIRATORY SYSTEM .....	M	7	-	1	-	1	-	1	1	1	-	1	-
			F	3	-	1	-	-	-	-	-	-	1	-	1
			T	10	-	1	1	1	-	2	1	1	1	-	1
A	7	MENINGES AND CENTRAL ..... NERVOUS SYSTEM	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	8	INTESTINES, PERITONEUM, ... AND MESENTERIC GLANDS	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	9	BONES AND JOINTS .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	10	OTHER .....	M	2	-	1	-	-	-	-	-	-	-	1	-
			F	1	-	-	-	-	-	-	-	-	-	1	-
			T	3	-	1	-	-	-	-	-	-	-	2	-
TOTAL (A6-A10). ....			M	9	-	2	-	1	-	1	1	1	-	1	1
			F	4	-	1	-	-	-	1	-	1	-	1	-
			T	13	-	2	1	1	-	2	1	1	1	2	1
A	11	PLAGUE .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	12	ANTHRAX .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	13	BRUCELLOSIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	14	LEPROSY .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	15	DIPHTHERIA .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	16	WHOOPING COUGH .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	17	STREPTOCOCCAL SORE THROAT AND SCARLET FEVER	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	1	-	-	-	-	-	-	-	-	-	-	1
			T	1	-	-	-	-	-	-	-	-	-	-	1
A	18	ERYSIPELAS .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-
A	19	MENINGOCOCCAL INFECTION ...	M	3	1	-	1	-	-	1	-	-	-	-	-
			F	3	-	-	1	-	-	-	-	-	-	1	1
			T	6	1	-	2	-	-	1	-	-	-	1	1
A	20	TETANUS .....	M	-	-	-	-	-	-	-	-	-	-	-	-
			F	-	-	-	-	-	-	-	-	-	-	-	-
			T	-	-	-	-	-	-	-	-	-	-	-	-

[illegible]

TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
A 42	ANCYLOSTOMIASIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 43	OTHER HELMINTHIASES .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 44	ALL OTHER .....	M	4	1	-	-	1	1	-	-	-	1	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	4	1	-	-	1	1	-	-	-	1	-	-	-
TOTAL (A1-A44) .....			M 54	7	5	4	4	3	4	3	5	3	3	5	8
			F 31	2	1	4	-	2	3	-	5	2	3	6	3
			T 85	9	6	8	4	5	7	3	10	5	6	11	11
II. NEOPLASMS.															
MALIGNANT NEOPLASMS (A45-A60)															
A 45	BUCCAL CAVITY AND PHARYNX .....	M	20	2	1	3	-	1	1	3	1	2	2	1	3
		F	6	-	2	2	-	-	-	-	1	1	-	-	-
		T	26	2	3	5	-	1	1	3	2	3	2	1	3
A 46	ESOPHAGUS .....	M	24	-	2	-	2	1	2	2	4	2	1	3	5
		F	7	1	2	-	2	-	2	-	-	-	-	-	-
		T	31	1	4	-	4	1	4	2	4	2	1	3	5
A 47	STOMACH .....	M	130	15	8	13	12	8	8	6	10	8	16	11	15
		F	52	5	1	5	6	2	3	1	7	7	6	5	5
		T	182	20	9	18	18	10	11	7	17	15	23	17	20
A 48	INTESTINE, EXCEPT RECTUM .....	M	92	11	7	9	6	8	6	13	5	10	4	7	6
		F	85	6	10	6	5	6	5	10	5	7	13	6	6
		T	177	17	17	15	11	14	12	18	10	15	11	20	12
A 49	RECTUM AND RECTOSIGMOID JUNCTION .....	M	55	3	4	4	7	5	1	3	11	4	5	3	5
		F	27	4	2	4	2	1	-	2	-	1	4	3	4
		T	82	7	6	8	9	6	1	5	11	5	9	6	9
A 50	LARYNX .....	M	6	-	1	-	1	-	1	-	-	1	-	2	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	6	-	1	-	1	-	1	-	-	1	-	2	-
A 51	TRACHEA, BRONCHUS, AND LUNG .....	M	244	20	13	16	18	27	17	18	21	22	22	22	28
		F	50	6	5	3	7	1	4	2	5	3	3	2	9
		T	294	26	18	19	25	28	21	20	26	25	25	24	37
A 52	BONE .....	M	9	-	-	2	2	-	1	-	-	1	1	1	1
		F	4	-	-	-	-	-	-	-	1	2	1	-	-
		T	13	-	-	2	2	-	1	-	1	3	2	1	1
A 53	SKIN .....	M	6	-	2	1	-	-	-	-	-	-	-	1	2
		F	12	-	-	1	-	1	3	-	2	1	2	1	1
		T	18	-	2	2	-	1	3	-	2	1	2	2	3
A 54	BREAST .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	148	12	13	15	16	14	8	10	15	12	12	8	13
		T	148	12	13	15	16	14	8	10	15	12	12	8	13
A 55	CERVIX UTERI .....	F	27	1	2	5	2	3	-	1	2	2	5	2	2
A 56	UTERUS, OTHER .....	F	20	2	2	3	2	3	4	2	-	1	-	1	-
A 57	PROSTATE .....	M	117	14	9	7	13	13	6	3	6	10	8	14	14
A 58	OTHER AND UNSPECIFIED SITES .....														
A	DIGESTIVE ORGANS AND PERITONEUM (155-159) .....	M	90	5	7	7	3	11	7	7	8	12	5	7	11
		F	79	7	5	7	7	7	9	10	4	5	6	6	6
		T	169	12	12	14	10	18	16	17	12	17	11	13	17
B	RESPIRATORY ORGANS (160,163) .....	M	4	-	-	2	-	-	-	1	-	1	-	-	-
		F	3	-	-	-	-	-	2	-	-	-	-	1	-
		T	7	-	-	2	-	-	2	1	-	1	-	1	-
C	CONNECTIVE AND OTHER SOFT TISSUE (171) .....	M	7	1	-	2	-	-	-	-	1	2	1	-	-
		F	6	-	-	1	1	1	-	2	-	-	-	1	-
		T	13	1	-	3	1	1	-	2	1	2	1	1	-
D	OVARY, FALLOPIAN TUBE, AND BROAD LIGAMENT (183) .....	F	52	-	7	6	3	6	6	4	5	3	4	3	5
E	OTHER AND UNSPECIFIED FEMALE GENITAL ORGANS (184) .....	F	4	-	-	-	1	-	-	-	-	-	1	2	-



## DIVISION OF VITAL STATISTICS

TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
F	OTHER MALE GENITAL ORGANS (186,187) .....	M	8	1	-	-	-	-	-	3	2	-	-	1	1
G	BLADDER (188) .....	M	24	1	2	-	1	1	2	2	3	4	2	1	.5
		F	6	-	1	1	1	-	-	1	-	-	-	-	2
		T	30	1	3	1	2	1	2	2	4	4	2	1	7
H	OTHER AND UNSPECIFIED URINARY ORGANS (189) ....	M	28	1	1	2	4	5	1	2	3	1	3	5	-
		F	18	-	4	4	1	1	2	1	2	-	2	-	1
		T	46	1	5	6	5	6	3	3	5	1	5	5	1
I	BRAIN AND NERVOUS SYSTEM (191,192) .....	M	33	4	2	3	4	2	4	3	4	1	3	3	-
		F	22	1	4	2	3	1	3	2	-	1	2	-	3
		T	55	5	6	5	7	3	7	5	4	2	5	3	3
J	OTHER .....	M	54	2	7	3	6	6	4	-	5	4	2	10	5
		F	48	1	1	6	3	2	4	3	6	6	5	7	4
		T	102	3	8	9	9	8	8	3	11	10	7	17	9
	TOTAL (A58). ....	M	248	15	19	19	18	25	18	18	26	25	16	27	22
		F	238	9	22	27	20	18	26	22	18	15	20	20	21
		T	486	24	41	46	38	43	44	40	44	40	36	47	43
A 59	LEUKAEMIA .....	M	55	6	1	6	4	1	6	4	8	4	5	8	2
		F	44	4	3	2	4	3	5	1	8	4	3	3	4
		T	99	10	4	8	8	4	11	5	16	8	8	11	6
A 60	OTHER LYMPHATIC AND HAEMOTOPHOETIC TISSUE.														
A	HODGKIN'S DISEASE (201) .....	M	9	1	-	-	2	1	1	-	1	-	1	1	1
		F	9	1	1	-	-	1	-	1	4	1	-	-	-
		T	18	2	1	-	2	2	1	1	5	1	1	1	1
B	OTHER .....	M	47	7	3	4	4	5	2	3	4	3	5	3	4
		F	36	4	2	4	2	1	3	3	2	5	3	2	5
		T	83	11	5	8	6	6	5	6	6	8	8	5	9
	TOTAL (A60). ....	M	56	8	3	4	6	6	3	3	5	3	6	4	5
		F	45	5	3	4	2	2	3	4	6	6	3	2	5
		T	101	13	6	8	8	8	6	7	11	9	9	6	10
	TOTAL (A45-A60). ....	M	1,062	94	70	84	89	95	70	73	97	92	86	104	108
		F	765	55	67	77	68	54	64	53	69	60	67	61	70
		T	1,827	149	137	161	157	149	134	126	166	152	153	165	178
A 61	BENIGN AND UNSPECIFIED ....	M	12	-	-	-	-	3	1	2	1	1	-	2	2
		F	9	1	-	-	-	2	-	-	-	2	1	2	1
		T	21	1	-	-	-	5	1	2	1	3	1	4	3
	TOTAL (A45-A61). ....	M	1,074	94	70	84	89	98	71	75	98	93	86	106	110
		F	774	56	67	77	68	56	64	53	69	62	68	63	71
		T	1,848	150	137	161	157	154	135	128	167	155	154	169	181
III. ENDOCRINE, NUTRITIONAL, AND METABOLIC DISEASES.															
A 62	NON-TOXIC GOITRE .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 63	THYROTOXICOSIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	3	-	-	-	2	1	-	-	-	-	-	-	-
		T	3	-	-	-	2	1	-	-	-	-	-	-	-
A 64	DIABETES MELLITUS .....	M	97	10	9	15	4	4	11	2	8	9	6	18	1
		F	98	13	11	8	12	8	8	12	7	3	6	5	5
		T	195	23	20	23	16	12	19	14	15	12	12	23	6
A 65	NUTRITIONAL DEFICIENCY STATES .....	M	8	-	1	1	-	-	1	-	-	1	1	3	-
		F	8	2	1	2	-	-	-	-	-	-	-	1	2
		T	16	2	2	3	-	-	1	-	-	1	1	4	2
A 66	OTHER .....	M	25	4	6	-	3	3	3	2	1	1	-	1	1
		F	18	2	2	2	4	1	-	2	3	-	-	-	2
		T	43	6	8	2	7	4	3	4	4	1	-	1	3
	TOTAL (A62-A66). ....	M	130	14	16	16	7	7	15	4	9	11	7	22	2
		F	127	17	14	12	18	10	8	14	10	3	6	6	9
		T	257	31	30	28	25	17	23	18	19	14	13	28	11
IV. DISEASES OF BLOOD AND BLOOD-FORMING ORGANS.															
A 67	ANAEMIAS .....	M	19	2	-	-	1	4	2	-	-	1	2	3	4
		F	15	1	1	-	-	1	3	-	2	2	3	1	1
		T	34	3	1	-	1	5	5	-	2	3	5	4	5

TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
A 68	OTHER .....	M	4	-	-	-	-	-	-	-	-	1	2	-	1
		F	6	1	-	-	-	1	1	1	1	-	1	-	-
		T	10	1	-	-	-	1	1	1	1	1	3	-	1
	TOTAL (A67-A68) .....	M	23	2	-	-	1	4	2	-	-	2	4	3	5
		F	21	2	1	-	-	2	4	1	3	2	4	1	1
		T	44	4	1	-	1	6	6	1	3	4	8	4	6
V. MENTAL DISORDERS.															
A 69	PSYCHOSES .....	M	5	-	1	-	1	-	-	-	-	-	1	1	1
		F	2	1	-	1	-	-	-	-	-	-	-	-	-
		T	7	1	1	1	1	-	-	-	-	-	1	1	1
A 70	NEUROSES AND OTHER NON- PSYCHOTIC MENTAL DISORDERS	M	23	1	-	3	1	4	1	2	4	1	1	1	4
		F	4	-	-	-	-	1	-	1	-	-	1	-	1
		T	27	1	-	3	1	5	1	3	4	1	2	1	5
A 71	MENTAL RETARDATION .....	M	2	-	1	-	-	-	-	1	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	1	-	-	-	-	1	-	-	-	-	-
	TOTAL (A69-A71) .....	M	30	1	2	3	2	4	1	3	4	1	2	2	5
		F	6	1	-	1	-	1	-	1	-	-	1	-	1
		T	36	2	2	4	2	5	1	4	4	1	3	2	6
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.															
A 72	MENINGITIS .....	M	10	-	-	1	1	-	3	-	-	2	1	-	2
		F	5	-	-	1	1	1	1	2	-	-	-	-	-
		T	15	-	-	2	1	1	4	2	-	2	1	-	2
A 73	MULTIPLE SCLEROSIS .....	M	2	-	-	-	-	-	1	1	-	-	-	-	-
		F	5	-	-	-	2	-	1	-	-	-	2	-	-
		T	7	-	-	-	2	-	2	1	-	-	2	-	-
A 74	EPILEPSY .....	M	10	-	-	-	3	1	1	-	-	2	-	1	2
		F	4	1	-	-	-	-	-	-	-	1	-	1	1
		T	14	1	-	-	3	1	1	-	-	3	-	2	3
A 75	INFLAMMATORY DISEASES OF EYE	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 76	CATARACT .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 77	GLAUCOMA .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 78	OTITIS MEDIA AND MASTOIDITIS	M	1	-	-	-	-	1	-	-	-	-	-	-	-
		F	1	-	-	-	-	-	-	-	-	-	-	1	-
		T	2	-	-	-	-	1	-	-	-	-	-	1	-
A 79	OTHER .....	M	30	3	2	4	1	3	-	6	4	1	1	1	4
		F	25	4	1	1	-	2	5	1	2	1	3	3	2
		T	55	7	3	5	1	5	5	7	6	2	4	4	6
	TOTAL (A72-A79) .....	M	53	3	2	5	5	5	5	7	4	5	2	2	8
		F	40	5	1	2	2	3	7	3	2	2	5	5	3
		T	93	8	3	7	7	8	12	10	6	7	7	7	11
VII. DISEASES OF THE CIRCULATORY SYSTEM.															
A 80	ACTIVE RHEUMATIC FEVER.														
A	WITH HEART INVOLVEMENT ... (391,392.0)	M	3	-	1	-	-	-	1	1	-	-	-	-	-
		F	3	-	-	-	-	-	1	1	1	-	-	-	-
		T	6	-	1	-	-	-	2	2	1	-	-	-	-
B	OTHER .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A80) .....	M	3	-	1	-	-	-	1	1	-	-	-	-	-
		F	3	-	-	-	-	-	1	1	1	-	-	-	-
		T	6	-	1	-	-	-	2	2	1	-	-	-	-
A 81	CHRONIC RHEUMATIC HEART ... DISEASE	M	37	6	4	5	-	3	3	3	3	2	1	1	6
		F	35	2	3	-	4	5	3	3	2	4	3	2	4
		T	72	8	7	5	4	8	6	6	5	6	4	3	10

## DIVISION OF VITAL STATISTICS

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A 82	HYPERTENSIVE DISEASE.													
A	WITH HEART INVOLVEMENT ... (400,1,400,9,402,404)	M 23 F 23 T 46	5 2 7	- 3 3	1 2 3	3 2 5	1 - 1	2 3 5	2 2 4	2 2 4	2 - 2	3 1 4	1 1 2	1 5 6
B	OTHER .....	M 12 F 23 T 35	1 2 3	2 2 4	1 4 5	1 1 2	2 1 3	1 2 3	- 1 1	1 1 2	1 1 2	- 1 1	2 2 4	- 5 5
	TOTAL (A82). ....	M 35 F 46 T 81	6 4 10	2 5 7	2 6 8	4 3 7	3 1 4	3 5 8	2 3 5	3 3 6	3 1 4	3 2 5	3 3 6	1 10 11
A 83	ISCHAEMIC HEART DISEASE ...	M 1,873 F 903 T 2,776	163 71 234	148 84 232	166 90 256	151 84 235	153 101 254	168 71 239	142 68 210	161 66 227	158 69 227	131 77 208	162 49 211	170 73 243
A 84	OTHER FORMS OF HEART ..... DISEASE	M 135 F 101 T 236	6 13 19	16 10 26	15 9 24	12 3 15	11 15 26	11 4 15	8 8 16	9 7 16	12 6 18	15 5 20	12 8 20	8 13 21
A 85	CEREBROVASCULAR DISEASE ...	M 507 F 473 T 980	39 33 72	35 31 66	55 33 88	44 33 93	44 31 75	41 33 74	39 39 78	45 40 85	35 53 88	37 41 78	47 47 94	46 43 89
A 86	DISEASES OF ARTERIES, ..... ARTERIOLES, AND CAPILLARIES	M 183 F 127 T 310	16 12 28	10 7 17	11 9 20	22 9 31	15 11 26	20 9 29	11 15 26	23 10 33	18 11 29	15 8 23	12 12 24	10 14 24
A 87	VENOUS THROMBOSIS AND ..... EMBOLISM	M 36 F 21 T 57	2 3 5	4 1 5	1 2 3	3 - 3	5 3 8	4 1 5	5 1 6	2 4 6	1 3 4	3 1 4	2 1 3	4 1 5
A 88	OTHER .....	M 3 F 8 T 11	- - -	- 1 1	1 2 3	1 2 3	- 1 1	- - -	- - -	- - -	- 1 1	- - -	1 1 2	- - -
	TOTAL (A80-A88). ....	M 2,812 F 1,717 T 4,529	238 138 376	220 142 362	256 151 407	237 154 391	234 168 402	251 127 378	211 138 349	246 133 379	229 148 377	205 137 342	240 123 363	245 158 403
VIII. DISEASES OF THE RESPIRATORY SYSTEM.														
A 89	ACUTE RESPIRATORY ..... INFECTIONS	M 9 F 4 T 13	1 1 2	2 2 4	1 - 1	2 - 2	- - -	1 - 1	- - -	- - -	1 - 1	- - -	- 1 1	1 - 1
A 90	INFLUENZA .....	M 45 F 26 T 71	2 4 6	10 3 13	17 5 22	7 6 13	2 5 7	4 - 4	- - -	- - -	1 - 1	1 1 2	- 2 2	1 - 1
	PNEUMONIA (A91, A92).													
A 91	VIRAL .....	M 9 F 5 T 14	- - -	1 1 2	- - -	- - -	3 - 3	- 2 2	2 - 2	1 1 2	1 1 2	- - -	- - -	1 - 1
A 92	OTHER .....	M 189 F 136 T 325	12 18 30	18 16 34	21 15 36	17 12 29	21 16 37	19 6 25	11 6 17	12 10 22	12 7 19	20 13 33	14 6 20	12 11 23
	TOTAL (A91, A92). ....	M 198 F 141 T 339	12 18 30	19 17 36	21 15 36	17 12 29	24 16 40	19 8 27	13 6 19	13 11 24	13 8 21	20 13 33	14 6 20	13 11 24
A 93	BRONCHITIS, EMPHYSEMA, .... AND ASTHMA	M 171 F 49 T 220	12 6 18	18 7 25	18 4 22	17 8 25	17 2 19	13 4 17	14 1 15	12 4 16	11 2 13	12 4 16	15 3 18	12 4 16
A 94	HYPERTROPHY OF TONSILS .... AND ADENOIDS	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
A 95	EMPHYEMA AND LUNG ABSCESS	M 4 F 4 T 8	- - -	- - -	2 2 4	2 1 3	- - -	- - -	- - -	- - -	- - -	- 1 1	- - -	- - -
A 96	OTHER .....	M 51 F 38 T 89	3 1 4	8 2 10	2 2 4	2 2 4	2 2 4	3 4 7	2 10 12	8 1 9	3 4 7	3 4 7	6 4 10	9 2 11
	TOTAL (A89-A96). ....	M 478 F 262 T 740	30 30 60	57 31 88	61 28 89	47 29 76	45 25 70	40 16 56	29 17 46	33 16 49	29 14 43	36 23 59	35 16 51	36 17 53

TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A (EIGHTH REVISION)		TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
IX. DISEASES OF THE DIGESTIVE SYSTEM.															
A 97	DISEASES OF TEETH AND SUPPORTING STRUCTURES	M	1	-	-	-	-	-	-	1	-	-	-	-	-
		F	1	-	-	-	-	-	-	-	-	-	-	-	-
		T	1	-	-	-	-	-	-	1	-	-	-	-	-
A 98	PEPTIC ULCER	M	47	1	1	3	2	3	2	7	10	7	6	2	3
		F	11	-	-	1	2	-	1	2	2	2	1	-	-
		T	58	1	1	4	4	3	3	9	12	9	7	2	3
A 99	GASTRITIS AND DUODENITIS	M	5	-	-	1	1	-	-	-	1	1	1	-	-
		F	1	-	-	-	1	-	-	-	-	-	-	-	-
		T	6	-	-	1	2	-	-	-	1	1	1	-	-
A 100	APPENDICITIS	M	7	1	1	-	-	1	-	1	1	1	1	-	-
		F	2	-	-	-	-	-	-	-	-	-	2	-	-
		T	9	1	1	-	-	1	-	1	1	1	3	-	-
A 101	INTESTINAL OBSTRUCTION AND HERNIA	M	18	2	-	1	2	1	2	1	3	-	2	1	3
		F	21	4	-	1	-	2	2	2	1	2	2	3	2
		T	39	6	-	2	2	3	4	3	4	2	4	4	5
A 102	CIRRHOSIS OF LIVER	M	64	6	2	8	7	4	3	5	7	6	5	2	9
		F	36	1	2	2	2	4	4	4	3	6	5	2	1
		T	100	7	4	10	9	8	7	9	10	12	10	4	10
A 103	CHOLELITHIASIS AND CHOLECYSTITIS	M	24	2	2	2	2	2	3	-	3	-	5	1	2
		F	28	3	3	2	1	3	1	3	1	6	5	-	-
		T	52	5	5	4	3	5	4	3	4	6	10	1	2
A 104	OTHER	M	45	5	6	3	-	4	3	4	8	3	2	4	3
		F	38	2	-	2	2	3	2	3	3	6	8	4	3
		T	83	7	6	5	2	7	5	7	11	9	10	8	6
TOTAL (A97-A104)			M	211	17	12	18	14	15	19	33	18	22	10	20
		F	137	10	5	8	8	12	10	14	10	22	23	9	6
		T	348	27	17	26	22	27	23	33	43	40	45	19	26
X. DISEASES OF THE GENITO-URINARY SYSTEM.															
A 105	ACUTE NEPHRITIS	M	2	-	-	-	-	-	1	-	1	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	-	-	-	-	1	-	1	-	-	-	-
A 106	OTHER NEPHRITIS AND NEPHROSIS	M	23	3	1	2	1	2	-	6	3	1	2	1	1
		F	13	-	1	-	-	1	2	-	-	1	2	2	3
		T	36	3	2	2	1	3	1	8	3	2	4	3	4
A 107	INFECTIONS OF KIDNEY	M	26	4	2	3	1	1	2	1	2	2	3	3	2
		F	25	1	-	2	2	3	3	2	6	2	2	1	1
		T	51	5	2	5	3	4	5	3	8	4	5	4	3
A 108	CALCULUS	M	2	1	-	-	-	1	-	-	-	-	-	-	-
		F	3	-	-	1	-	-	-	1	-	-	-	-	1
		T	5	1	-	1	-	1	-	1	-	-	-	-	1
A 109	HYPERPLASIA OF PROSTATE	M	15	-	-	5	-	-	3	-	1	2	1	2	1
A 110	BREAST	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
A 111	OTHER	M	25	2	1	3	-	3	4	1	1	1	5	3	1
		F	18	1	-	2	1	-	-	-	-	1	4	4	5
		T	43	3	1	5	1	3	4	1	1	2	9	7	6
TOTAL (A105-A111)			M	93	10	4	13	7	10	8	8	6	11	9	5
		F	59	2	1	5	3	4	4	5	6	4	8	7	10
		T	152	12	5	18	5	11	14	13	14	10	19	16	15
XI. COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.															
A 112	TOXAEMIAS	F	1	-	-	-	-	-	-	-	-	1	-	-	-
A 113	HAEMORRHAGE	F	-	-	-	-	-	-	-	-	-	-	-	-	-
A 114	ABORTION INDUCED FOR LEGAL INDICATIONS	F	-	-	-	-	-	-	-	-	-	-	-	-	-
A 115	OTHER AND UNSPECIFIED ABORTION	F	1	-	-	-	-	-	-	-	-	-	-	1	-
A 116	SEPSIS	F	-	-	-	-	-	-	-	-	-	-	-	-	-
A 117	OTHER COMPLICATIONS	F	2	-	-	-	-	-	-	-	1	1	-	-	-



## DIVISION OF VITAL STATISTICS

TABLE 10  
DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1970

LIST A NO.	CAUSE OF DEATH INTERMEDIATE LIST A ( EIGHTH REVISION)		TOTAL	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
A 118	DELIVERY WITHOUT MENTION OF COMPLICATION .....	F	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL (A112-A118). ....	F	4	-	-	-	-	-	-	-	1	2	-	1	-
XII. DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.															
A 119	INFECTIONS .....	M	2	-	1	-	-	-	-	1	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	2	-	1	-	-	-	-	1	-	-	-	-	-
A 120	OTHER .....	M	4	1	1	-	-	2	-	-	-	-	-	-	-
		F	3	1	-	-	-	2	-	-	-	-	-	-	-
		T	7	2	1	-	-	4	-	-	-	-	-	-	-
	TOTAL (A119-A120). ....	M	6	1	2	-	-	2	-	1	-	-	-	-	-
		F	3	1	-	-	-	2	-	-	-	-	-	-	-
		T	9	2	2	-	-	4	-	1	-	-	-	-	-
XIII. DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.															
A 121	ARTHRITIS AND SPONDYLITIS	M	10	1	1	2	-	-	-	2	1	-	1	1	1
		F	12	1	2	1	1	1	-	1	-	1	1	1	2
		T	22	2	3	3	1	1	-	3	1	1	2	2	3
A 122	RHEUMATISM .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 123	OSTEOMYELITIS AND PERIOSTITIS .....	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	2	-	1	-	-	-	-	-	-	1	-	-	-
		T	2	-	1	-	-	-	-	-	-	1	-	-	-
A 124	ANKYLOSIS AND ACQUIRED MUSCULOSKELETAL DEFORMITIES .....	M	1	-	-	-	-	-	-	-	-	-	1	-	-
		F	1	-	-	-	-	-	-	-	-	-	-	-	1
		T	2	-	-	-	-	-	-	-	-	-	1	-	1
A 125	OTHER .....	M	6	-	-	1	2	1	-	-	1	1	-	-	-
		F	7	-	1	1	-	-	-	1	-	-	2	1	1
		T	13	-	1	2	2	1	-	1	1	1	2	1	1
	TOTAL (A121-A125). ....	M	17	1	1	3	2	1	-	2	2	1	2	1	1
		F	22	1	4	2	1	1	-	2	-	2	3	2	4
		T	39	2	5	5	3	2	-	4	2	3	5	3	5
XIV. CONGENITAL ANOMALIES.															
A 126	SPINA BIFIDA .....	M	3	-	-	-	1	-	-	-	1	-	-	1	-
		F	3	1	-	-	-	-	-	1	1	-	-	-	-
		T	6	1	-	-	1	-	-	1	2	-	-	1	-
A 127	OF HEART .....	M	21	4	3	2	-	3	1	1	1	2	3	1	-
		F	21	-	1	1	1	1	1	5	2	2	1	3	3
		T	42	4	4	3	1	4	2	6	3	4	4	4	3
A 128	OTHER ANOMALIES OF CIRCULATORY SYSTEM .....	M	1	-	-	-	-	-	-	-	-	-	1	-	-
		F	4	1	-	1	-	-	-	-	1	-	-	-	1
		T	5	1	-	1	-	-	-	-	1	-	1	-	1
A 129	CLEFT PALATE AND CLEFT LIP	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
A 130	OTHER .....	M	37	5	-	3	4	2	3	2	3	3	5	5	2
		F	32	4	-	3	4	3	3	2	2	5	2	4	-
		T	69	9	-	6	8	5	6	4	5	8	7	9	2
	TOTAL (A126-A130). ....	M	62	9	3	5	5	5	4	3	5	5	9	7	2
		F	60	6	1	5	5	4	4	8	6	7	3	7	4
		T	122	15	4	10	10	9	8	11	11	12	12	14	6
XV. CERTAIN CAUSES OF PERINATAL MORTALITY.															
A 131	BIRTH INJURY AND DIFFICULT LABOUR .....	M	9	-	1	-	-	2	1	-	2	1	2	-	-
		F	6	-	2	-	1	-	-	-	1	1	-	1	-
		T	15	-	3	-	1	2	1	-	3	2	2	1	-
A 132	CONDITIONS OF PLACENTA .... AND CORD .....	M	13	3	1	-	2	1	1	-	-	3	1	-	1
		F	9	-	3	-	1	-	1	-	1	1	1	1	-
		T	22	3	4	-	3	1	2	-	1	4	2	1	1
A 133	HAEMOLYTIC DISEASE OF NEWBORN .....	M	8	-	1	1	2	-	1	-	-	1	1	1	-
		F	4	-	-	1	-	-	-	-	-	1	-	1	-
		T	12	-	1	2	2	-	1	1	-	2	1	2	-

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A 134	ANOXIC AND HYPOXIC .....	M	99	5	7	10	9	6	10	9	10	14	9	5	5
	CONDITIONS NOT ELSEWHERE	F	81	8	6	8	7	5	5	7	9	5	3	10	8
	CLASSIFIED	T	180	13	13	18	16	11	15	16	19	19	12	15	13
A 135	OTHER .....	M	70	8	6	12	6	2	5	4	7	5	5	6	4
		F	49	3	4	5	3	5	3	7	3	5	4	5	2
		T	119	11	10	17	9	7	8	11	10	10	9	11	6
	TOTAL (A131-A135). ....	M	199	16	16	23	19	11	18	13	19	24	18	12	10
		F	149	11	15	14	12	10	9	15	14	13	8	18	10
		T	348	27	31	37	31	21	27	28	33	37	26	30	20
	XVI. SYMPTOMS AND ILL- DEFINED CONDITIONS.														
A 136	SENILITY WITHOUT MENTION OF PSYCHOSIS	M	11	-	-	-	2	1	1	-	1	2	-	1	3
		F	7	-	1	2	-	1	1	1	-	-	-	-	11
		T	18	-	1	2	2	2	2	1	1	2	-	1	4
A 137	SYMPTOMS AND OTHER ILL- DEFINED CONDITIONS	M	167	12	20	14	19	10	9	13	7	14	15	17	17
		F	79	5	8	11	8	4	8	3	6	3	7	6	10
		T	246	17	28	25	27	14	17	16	13	17	22	23	27
	TOTAL (A136,A137). ....	M	178	12	20	14	21	11	10	13	8	16	15	18	20
		F	86	5	9	13	8	5	9	4	6	3	7	6	11
		T	264	17	29	27	29	16	19	17	14	19	22	24	31
	XVII. ACCIDENTS, POISONINGS, AND VIOLENCE. EXVII. EXTERNAL CAUSE.														
	ACCIDENTS (AE138-AE146).														
AE 138	MOTOR VEHICLE ACCIDENTS.														
A	TRAFFIC (E810-E819) .....	M	283	19	17	14	20	40	34	32	36	25	17	19	10
		F	104	7	5	8	7	13	8	10	13	7	7	8	11
		T	387	26	22	22	27	53	42	42	49	32	24	27	21
B	NON-TRAFFIC (E820-E823)	M	6	-	-	-	-	1	1	1	1	1	1	-	-
		F	2	-	-	-	-	-	-	1	-	1	-	-	-
		T	8	-	-	-	-	1	1	2	1	2	1	-	-
	TOTAL (AE138). ....	M	289	19	17	14	20	41	35	33	37	26	18	19	10
		F	106	7	5	8	7	13	8	11	13	8	7	8	11
		T	395	26	22	22	27	54	43	44	50	34	25	27	21
AE 139	OTHER TRANSPORT ACCIDENTS.														
A	DROWNINGS INVOLVING .....	M	10	-	-	-	-	2	2	1	4	1	-	-	-
	SMALL BOATS (E830.0, E832.0)	F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	10	-	-	-	-	2	2	1	4	1	-	-	-
B	DROWNINGS INVOLVING OTHER WATERCRAFT (E830.1- E830.9,E832.1-E832.9)	M	-	-	-	-	-	-	-	-	-	-	-	-	-
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-	-	-	-	-
C	OTHER TRANSPORT .....	M	25	1	1	1	-	1	3	4	7	1	5	1	-
		F	6	-	-	-	-	-	-	1	2	1	2	-	-
		T	31	1	1	1	-	1	3	5	9	2	7	1	-
	TOTAL (AE139). ....	M	35	1	1	1	-	3	5	5	11	2	5	1	-
		F	6	-	-	-	-	-	-	1	2	1	2	-	-
		T	41	1	1	1	-	3	5	6	13	3	7	1	-
AE 140	ACCIDENTAL POISONING .....	M	50	12	-	1	6	1	3	2	3	7	2	8	5
		F	22	1	1	2	2	1	1	3	2	2	3	-	4
		T	72	13	1	3	8	2	4	5	5	9	5	8	9
AE 141	ACCIDENTAL FALLS .....	M	85	8	8	8	8	5	8	11	5	2	10	6	6
		F	68	7	6	6	7	7	5	5	4	5	6	4	6
		T	153	15	14	14	15	12	13	16	9	7	16	10	12
AE 142	ACCIDENTS CAUSED BY FIRES	M	30	7	1	4	-	2	2	-	3	-	6	3	2
		F	23	1	-	4	-	2	2	1	3	2	3	4	4
		T	53	8	1	8	-	4	4	1	4	3	8	6	6
AE 143	ACCIDENTAL DROWNING .....	M	44	-	1	2	1	6	14	7	9	2	-	2	-
		F	5	-	-	-	-	-	3	-	1	-	1	-	-
		T	49	-	1	2	1	6	17	7	9	3	-	3	-
AE 144	ACCIDENT CAUSED BY FIREARM MISSILES	M	16	-	-	2	4	2	-	1	2	-	3	1	1
		F	-	-	-	-	-	-	-	-	-	-	-	-	-
		T	16	-	-	2	4	2	-	1	2	-	3	1	1
AE 145	ACCIDENTS MAINLY OF INDUSTRIAL TYPE	M	68	7	6	5	3	6	10	5	9	6	7	1	3
		F	1	-	-	-	-	-	1	-	-	-	-	-	-
		T	69	7	6	5	3	6	11	5	9	6	7	1	3

## DIVISION OF VITAL STATISTICS

TABLE 10

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AE 146	ALL OTHER ACCIDENTS .....	M 52 F 25 T 77	4 2 6	5 2 7	6 1 7	2 2 4	4 1 5	4 1 5	4 2 6	6 4 10	4 3 7	5 2 7	4 3 7	4 2 6
	TOTAL (AE138-AE146) .....	M 669 F 256 T 925	58 18 76	39 14 53	43 21 64	44 18 62	70 24 94	81 21 102	68 23 91	85 26 111	49 23 72	56 22 78	45 19 64	31 27 58
AE 147	SUICIDE .....	M 163 F 50 T 213	11 2 13	14 3 17	12 4 16	17 2 19	13 7 20	16 6 22	15 8 23	14 5 19	18 4 22	11 3 14	13 2 15	9 4 13
AE 148	HOMICIDE: LEGAL INTERVENTION .....	M 18 F 17 T 35	1 1 2	4 4 8	2 - 2	1 3 4	3 2 5	1 - 1	1 2 3	- 1 1	1 1 2	1 1 2	3 1 4	- 1 1
AE 149	INJURY UNDETERMINED IF ACCIDENTALLY OR PUR- POSELY INFLICTED .....	M 7 F 14 T 21	- 3 3	- - -	1 - 1	1 - 1	2 3 5	1 - 2	- 1 1	2 2 4	- 3 3	- 1 1	- - -	- - -
AE 150	WAR INJURIES .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	TOTAL (AE138-AE150) .....	M 857 F 337 T 1,194	70 24 94	57 21 78	58 25 83	63 23 86	88 36 124	99 28 127	84 34 118	101 34 135	68 31 99	68 27 95	61 22 83	40 32 72
NXVII. NATURE OF INJURY.														
AN 138	FRACTURE OF SKULL .....	M 123 F 37 T 160	9 2 11	6 2 8	10 3 13	6 7 13	13 1 14	15 6 21	12 3 15	9 3 12	14 4 18	12 3 15	10 2 12	7 1 8
AN 139	FRACTURE OF SPINE AND TRUNK .....	M 50 F 16 T 66	7 1 8	4 - 4	2 1 3	2 1 3	7 - 4	3 1 4	7 2 9	6 3 9	1 2 3	5 1 6	4 1 5	2 3 5
AN 140	FRACTURE OF LIMBS .....	M 41 F 59 T 100	3 6 9	6 5 11	2 5 7	6 8 14	4 4 8	3 2 5	6 4 10	1 5 6	3 4 7	3 6 9	3 4 7	1 6 7
AN 141	DISLOCATION WITHOUT FRACTURE .....	M - F - T -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
AN 142	SPRAINS AND STRAINS .....	M 1 F - T 1	- - 1	- - -	- - -	- - -	- - -	1 - 1	- - -	- - -	- - -	- - -	- - -	- - -
AN 143	INTRACRANIAL INJURY EXCLUDING SKULL FRACTURE .....	M 133 F 44 T 177	7 1 8	11 5 16	7 3 10	14 - 14	10 8 18	14 4 18	11 7 18	26 6 32	12 2 14	5 1 6	9 4 13	7 3 10
AN 144	INTERNAL INJURY .....	M 197 F 49 T 246	13 4 17	16 3 19	16 2 18	14 1 15	25 10 35	24 2 26	18 6 24	25 6 31	12 2 14	19 5 24	10 2 12	5 6 11
AN 145	OPEN WOUNDS .....	M 21 F 2 T 23	2 - 2	2 - 2	1 - 1	2 - 2	2 - 2	- - -	3 - 3	3 - 3	1 - 1	1 - 1	3 - 3	1 2 3
AN 146	SUPERFICIAL INJURY, CON- TUSION, AND CRUSHING WITH INTACT SKIN SURFACE .....	M - F 1 T 1	- - 1	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- 1 1	- - -	- - -	- - -
AN 147	FOREIGN BODY ENTERING THROUGH ORIFICE .....	M 16 F 11 T 27	1 - 1	1 2 3	4 - 4	1 1 2	- 1 1	2 1 3	- 1 2	1 2 2	- 1 2	1 1 3	2 1 3	1 - 1
AN 148	BURN .....	M 40 F 23 T 63	6 2 8	2 4 2	3 4 7	1 - 1	- 1 1	2 4 6	1 1 2	5 4 6	4 1 8	10 3 11	3 1 6	1 4 5
AN 149	EFFECTS OF CHEMICAL SUBSTANCES .....	M 94 F 58 T 152	17 4 21	2 4 6	6 5 11	10 4 14	5 8 13	6 3 9	5 6 11	7 4 11	11 7 18	6 6 12	11 1 12	8 6 14
AN 150	OTHER .....	M 141 F 37 T 178	5 4 9	7 - 7	7 2 9	7 1 8	22 3 25	27 7 34	20 4 24	19 4 23	9 4 13	5 3 8	6 4 10	7 1 8
	TOTAL (AN138-AN150) .....	M 857 F 337 T 1,194	70 24 94	57 21 78	58 25 83	63 23 86	88 36 124	99 28 127	84 34 118	101 34 135	68 31 99	68 27 95	61 22 83	40 32 72
	ALL CAUSES. ....	M 6,277 F 3,835 T 10,112	525 311 836	487 313 800	563 347 910	518 331 849	540 341 881	543 293 836	475 309 784	575 315 890	511 317 828	490 326 816	533 292 825	517 340 857

TABLE 11

INFANT DEATHS AND HOSPITAL INFANT DEATHS BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

COUNTRY, DISTRICT OR CENSUS DIVISION	TOTAL INFANT DEATHS				INFANT DEATHS - HOSPITAL			
	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE
ALBERTA								
01 DIVISION NO. 1								
007 BOW ISLAND, T.	1	1	-	-	-	-	-	-
040 MEDICINE HAT, C.	9	9	1	1	8	8	1	1
047 REDCLIFF, T.	-	-	-	-	-	-	-	-
COUNTY Rural	11	12	-	1	8	9	-	1
02 DIVISION NO. 2								
009 BROOKS, T.	-	-	-	-	-	-	-	-
014 COALDALE, T.	-	-	-	-	-	-	-	-
035 LETHBRIDGE, C.	25	14	11	-	25	14	11	-
081 PICTURE BUTTE, T.	-	-	-	-	-	-	-	-
046 RAYMOND, T.	-	1	-	1	-	1	-	1
056 TABER, T.	2	2	1	1	-	1	-	1
COUNTY	29	22	8	1	26	20	7	1
03 DIVISION NO. 3								
012 CARDSTON, T.	3	1	3	1	3	1	3	1
013 CLARESHOLM, T.	-	1	-	1	-	1	-	1
025 FORT MACLEOD, T.	2	1	2	1	2	1	2	1
037 MAGRATH, T.	-	-	-	-	-	-	-	-
044 PINCHER CREEK, T.	3	-	3	-	3	-	3	-
COUNTY	10	15	1	6	9	14	1	6
04 DIVISION NO. 4								
028 HANNA, T.	2	4	-	2	2	4	-	2
COUNTY	2	6	-	4	2	6	-	4
05 DIVISION NO. 5								
020 DRUMHELLER, C.	4	1	3	-	4	1	3	-
057 THREE HILLS, T.	1	-	1	-	1	-	1	-
060 VULCAN, T.	-	1	-	1	-	1	-	1
COUNTY	5	9	1	5	5	9	1	5
06 DIVISION NO. 6								
010 CALGARY, C.	180	150	38	8	159	131	33	5
018 DIDSBURY, T.	1	-	1	-	1	-	1	-
030 HIGH RIVER, T.	1	-	1	-	1	-	1	-
042 OLDS, T.	1	2	-	1	1	1	-	-
COUNTY	187	168	27	8	163	144	23	4
07 DIVISION NO. 7								
065 CASTOR, T.	-	-	-	-	-	-	-	-
076 PROVOST, T.	1	1	-	-	-	-	-	-
053 STETTLER, T.	7	4	3	-	6	3	3	-
061 WAINWRIGHT, T.	3	2	1	-	3	2	1	-
COUNTY	14	18	-	4	9	13	-	4
08 DIVISION NO. 8								
031 INNISFAIL, T.	-	2	-	2	-	2	-	2
033 LACOMBE, T.	-	-	-	-	-	-	-	-
045 PONOKA, T.	-	1	-	1	-	1	-	1
048 RED DEER, C.	18	11	10	3	15	9	9	3
072 RIMBEY, T.	1	-	1	-	1	-	1	-
050 ROCKY MOUNTAIN HOUSE, T.	4	3	3	2	4	3	3	2
055 SYLVAN LAKE, T.	-	-	-	-	-	-	-	-
COUNTY	30	41	2	13	20	32	1	13
09 DIVISION NO. 9								
087 BANFF, T.	1	-	1	-	-	-	-	-



## DIVISION OF VITAL STATISTICS

TABLE 11

INFANT DEATHS AND HOSPITAL INFANT DEATHS BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

COUNTY, DISTRICT OR CENSUS DIVISION	TOTAL INFANT DEATHS				INFANT DEATHS - HOSPITAL			
	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY OCCURRENCE RESIDENCE ELSEWHERE	TOTAL BY OCCURRENCE	TOTAL BY RESIDENCE	BY OCCURRENCE RESIDENCE ELSEWHERE	BY RESIDENCE OCCURRENCE ELSEWHERE
ALBERTA								
075 BELLEVUE, VL.	-	-	-	-	-	-	-	-
005 BLAIRMORE, T.	-	4	-	4	-	4	-	4
079 CANMORE, VL.	-	1	-	1	-	-	-	-
016 COLEMAN, T.	-	-	-	-	-	-	-	-
088 JASPER, T.	2	1	1	-	-	-	-	-
COUNTY	3	10	2	9	-	6	-	6
10 DIVISION NO. 10								
011 CAMROSE, C.	2	3	-	1	2	3	-	1
036 LLOYDMINSTER, C. (PT.)	-	3	-	3	-	3	-	3
085 TWO HILLS, T.	-	-	-	-	-	-	-	-
058 VEGREVILLE, T.	2	-	2	-	2	-	2	-
059 VERMILION, T.	-	-	-	-	-	-	-	-
074 VIKING, T.	-	-	-	-	-	-	-	-
COUNTY	6	15	-	9	5	14	-	9
11 DIVISION NO. 11								
017 DEVON, T.	-	-	-	-	-	-	-	-
019 DRAYTON VALLEY, T.	-	2	-	2	-	2	-	2
021 EDMONTON, C.	217	149	70	2	190	127	65	2
026 FORT SASKATCHEWAN, T.	2	2	1	1	2	2	1	1
034 LEBOUC, T.	2	2	-	-	2	2	-	-
086 MORINVILLE, T.	-	2	-	2	-	2	-	2
051 ST. ALBERT, T.	-	-	-	-	-	-	-	-
054 STONY PLAIN, T.	-	-	-	-	-	-	-	-
063 WETASKIWIN, C.	7	2	6	1	7	2	6	1
COUNTY	228	175	55	2	201	151	52	2
12 DIVISION NO. 12								
006 BONNYVILLE, T.	4	-	4	-	4	-	4	-
015 COLD LAKE, T.	2	1	1	-	2	1	1	-
039 FORT MCMURRAY, T.	8	5	4	1	5	3	3	1
066 GRAND CENTRE, T.	-	-	-	-	-	-	-	-
069 LAC LA BICHE, T.	2	1	1	-	2	1	1	-
052 ST. PAUL, T.	5	3	2	-	3	1	2	-
COUNTY	33	37	-	4	22	25	-	3
13 DIVISION NO. 13								
001 ATHABASCA, T.	2	-	2	-	2	-	2	-
002 BARRHEAD, T.	-	1	-	1	-	1	-	1
049 PEDWATER, T.	-	2	-	2	-	2	-	2
062 WESTLOCK, T.	2	-	2	-	1	-	1	-
COUNTY	8	12	1	5	4	9	-	5
14 DIVISION NO. 14								
022 FOSON, T.	4	8	-	4	3	7	-	4
068 HINTON, T.	2	1	2	1	2	1	2	1
077 WHITECOURT, T.	-	-	-	-	-	-	-	-
COUNTY	6	11	-	5	5	10	-	5
15 DIVISION NO. 15								
078 BEAVERLODGE, T.	1	1	-	-	1	1	-	-
023 FAIRVIEW, T.	3	1	2	-	3	1	2	-
027 GRANDE PRAIRIE, C.	7	8	2	3	3	5	1	3
067 GRIMSHAW, T.	-	1	-	1	-	1	-	1
029 HIGH PRAIRIE, T.	5	3	3	1	5	3	3	1
090 MANNING, T.	1	1	1	1	1	1	1	1
038 MCLENNAN, T.	1	1	-	-	1	1	-	-
043 PEACE RIVER, T.	7	2	5	-	7	2	5	-
082 SLAVE LAKE, T.	4	3	1	-	4	3	1	-
083 SPIRIT RIVER, T.	2	2	-	-	2	2	-	-
084 SWAN HILLS, T.	-	-	-	-	-	-	-	-
073 VALLEYVIEW, T.	4	4	2	2	2	3	1	2
COUNTY	49	61	1	13	35	46	1	12
PROVINCE	621	612	20	11	514	508	15	9



TABLE 12

[illegible]





TABLE 12

INT'L LIST NO.	CAUSE OF DEATH (EIGHTH REVISION)	TOTAL DAYS	TOTAL -28 DAYS	-1 DAY	1 DAY	2 DAYS	3 DAYS	NEONATAL						TOTAL 28 DAYS						POST-NEONATAL				11 MOS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
								4 DAYS	5 DAYS	6 DAYS	7-13 DAYS	14-20 DAYS	21-27 DAYS	1 YEAR	2 MOS	3 MOS	4 MOS	5 MOS	6 MOS	7 MOS	8 MOS	9 MOS	10 MOS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	SECTION XIV TOTAL *****	M	40	26	11	4	3	2	1	-	1	2	2	-	14	7	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

TABLE 13  
 INFANT DEATHS BY MONTH OF BIRTH BY MONTH OF DEATH AND SEX, ALBERTA, 1970

MONTH OF BIRTH		TOTAL	JAN.	FEB.	MARCH	APRIL	MONTH OF DEATH		JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
							MAY	JUNE						
BORN IN 1969	M	42	18	5	7	5	1	1	2	1	2	-	-	-
	F	24	19	3	6	11	2	1	1	-	1	-	-	-
	T	66	27	8	13	6	3	2	3	1	3	-	-	-
JANUARY	M	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	-	-	-	-	-	-	-	-	-	-	-	-	-
FEBRUARY	M	2	2	-	-	-	-	-	-	-	-	-	-	-
	F	1	1	-	-	-	-	-	-	-	-	-	-	-
	T	3	3	-	-	-	-	-	-	-	-	-	-	-
MARCH	M	2	2	-	-	-	-	-	-	-	-	-	-	-
	F	1	1	-	-	-	-	-	-	-	-	-	-	-
	T	3	2	1	-	-	-	-	-	-	-	-	-	-
APRIL	M	2	-	-	1	1	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	2	-	-	1	1	-	-	-	-	-	-	-	-
MAY	M	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNE	M	2	1	1	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	1	-	-	-	-	-	-	-
	T	3	1	1	-	-	1	-	-	-	-	-	-	-
JULY	M	2	1	-	1	-	-	-	-	-	-	-	-	-
	F	3	2	-	1	-	-	-	-	-	-	-	-	-
	T	5	3	-	2	-	-	-	-	-	-	-	-	-
AUGUST	M	6	2	2	1	-	-	-	1	-	-	-	-	-
	F	3	1	-	2	-	-	-	-	-	-	-	-	-
	T	9	3	2	3	-	-	-	1	-	-	-	-	-
SEPTEMBER	M	5	2	-	1	1	-	-	-	1	-	-	-	-
	F	2	-	-	1	-	-	-	1	-	-	-	-	-
	T	7	2	-	2	1	-	-	1	1	-	-	-	-
OCTOBER	M	3	1	-	-	2	-	-	-	-	-	-	-	-
	F	4	2	1	-	-	-	-	-	-	1	-	-	-
	T	7	3	1	-	2	-	-	-	-	1	-	-	-
NOVEMBER	M	8	4	1	-	-	1	1	-	-	1	-	-	-
	F	5	2	1	1	1	-	-	-	-	-	-	-	-
	T	13	6	2	1	1	1	1	-	-	1	-	-	-
DECEMBER	M	10	3	1	3	1	-	-	1	-	1	-	-	-
	F	4	1	-	1	-	1	1	-	-	-	-	-	-
	T	14	4	1	4	1	1	1	1	-	1	-	-	-
BORN IN 1970	M	313	18	21	33	25	18	29	23	30	37	34	25	20
	F	233	18	17	19	20	14	17	24	23	23	13	27	18
	T	546	36	38	52	45	32	46	47	53	60	47	52	38
JANUARY	M	32	18	3	6	2	1	1	-	-	-	1	-	-
	F	25	18	2	3	-	-	1	-	-	1	-	-	-
	T	57	36	5	9	2	1	2	-	-	1	1	-	-
FEBRUARY	M	24	-	18	2	-	2	-	1	-	-	1	-	-
	F	24	-	15	1	3	-	2	1	1	1	-	-	-
	T	48	-	33	3	3	2	2	2	1	1	1	-	-
MARCH	M	36	-	-	25	4	2	-	1	2	1	1	-	-
	F	21	-	-	15	4	1	-	1	-	-	-	-	-
	T	57	-	-	40	8	3	-	2	2	1	1	-	-
APRIL	M	24	-	-	-	19	-	1	1	-	1	2	-	-
	F	17	-	-	-	13	1	1	1	-	1	2	-	-
	T	41	-	-	-	32	1	2	2	-	2	2	-	-
MAY	M	23	-	-	-	-	13	3	-	1	3	-	2	1
	F	18	-	-	-	-	12	-	1	3	-	1	-	1
	T	41	-	-	-	-	25	3	1	4	3	1	2	2
JUNE	M	36	-	-	-	-	-	24	5	2	1	2	1	1
	F	15	-	-	-	-	-	13	1	-	1	-	-	-
	T	51	-	-	-	-	-	37	6	2	1	3	1	1
JULY	M	24	-	-	-	-	-	-	15	2	1	3	2	1
	F	30	-	-	-	-	-	-	19	6	3	-	2	-
	T	54	-	-	-	-	-	-	34	8	4	3	4	1
AUGUST	M	31	-	-	-	-	-	-	-	23	3	2	2	1
	F	20	-	-	-	-	-	-	-	13	4	-	1	2
	T	51	-	-	-	-	-	-	-	36	7	2	3	3
SEPTEMBER	M	30	-	-	-	-	-	-	-	-	27	2	1	-
	F	18	-	-	-	-	-	-	-	-	13	4	-	1
	T	48	-	-	-	-	-	-	-	-	40	6	1	1
OCTOBER	M	23	-	-	-	-	-	-	-	-	-	20	2	1
	F	10	-	-	-	-	-	-	-	-	-	7	1	2
	T	33	-	-	-	-	-	-	-	-	-	27	3	3
NOVEMBER	M	18	-	-	-	-	-	-	-	-	-	-	15	3
	F	24	-	-	-	-	-	-	-	-	-	-	23	1
	T	42	-	-	-	-	-	-	-	-	-	-	38	4
DECEMBER	M	12	-	-	-	-	-	-	-	-	-	-	-	12
	F	11	-	-	-	-	-	-	-	-	-	-	-	11
	T	23	-	-	-	-	-	-	-	-	-	-	-	23
TOTAL DEATHS	M	355	36	26	40	30	19	30	25	31	39	34	25	20
	F	257	27	20	25	21	16	18	25	23	24	13	27	18
	T	612	63	46	65	51	35	48	50	54	63	47	52	38

TABLE 14  
LIVE BIRTHS BY PLACE OF OCCURRENCE AND PLACE OF RESIDENCE, 1970

## RESIDENCE

Place of Occurrence	Total Occurrence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	U.S.A.	Other
Total Residence	372,540	12,539	1,957	14,159	11,545	91,757	134,724	18,248	16,443	31,967	36,861	451	1,337	517	35
Newfoundland	12,484	12,449	1	5	3	4	13	1	-	1	2	-	2	3	-
Prince Edward Island	1,980	9	1,936	12	16	2	1	-	-	3	-	-	1	-	-
Nova Scotia	14,271	39	17	14,081	90	4	17	1	3	5	2	-	2	7	3
New Brunswick	11,707	7	1	24	11,384	188	11	1	-	-	2	-	-	89	-
Quebec	90,410	27	-	4	23	90,193	82	2	-	3	7	-	5	60	4
Ontario	136,072	1	2	20	6	1,321	134,397	23	5	16	16	-	14	238	13
Manitoba	18,589	2	-	-	2	4	83	18,118	209	23	12	1	103	32	-
Saskatchewan	16,388	2	-	2	-	1	7	43	16,097	200	18	1	2	15	-
Alberta	31,977	2	-	4	2	1	16	21	102	31,635	98	8	61	24	3
British Columbia	36,879	-	-	4	1	2	24	10	24	59	36,676	6	12	49	12
Yukon	457	-	-	-	-	-	-	-	1	1	18	435	2	-	-
Northwest Territories	1,143	-	-	-	-	-	-	-	-	11	-	-	1,132	-	-
U.S.A.	183	1	-	3	18	37	73	28	2	10	10	-	1	-	-

TABLE 15  
LIVE BIRTHS AND LIVE BIRTHS IN HOSPITAL BY OCCURRENCE AND RESIDENCE FOR  
CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

	TOTAL BIRTHS				BIRTHS IN HOSPITAL			
	Total by occurrence	Total by residence	By occurrence; residence elsewhere	By residence; occurrence elsewhere	Total by occurrence	Total by residence	By occurrence; residence elsewhere	By residence; occurrence elsewhere
Alberta	31,977	31,967	342	332	31,784	31,771	342	329
Division No. 1								
Bow Island, t.	43	18	34	9	43	18	34	9
Medicine Hat, c.	546	402	166	22	545	401	166	22
Redcliff, t.	-	38	-	38	-	38	-	38
Rural	592	624	36	68	588	620	36	68
Division No. 2								
Brooks, t.	193	84	118	9	192	84	117	9
Coaldale, t.	36	49	13	26	35	48	13	26
Lethbridge, c.	1,059	720	370	31	1,059	720	370	31
Picture Butte, t.	21	4	19	2	21	4	19	2
Raymond, t.	34	41	12	19	33	40	12	19
Taber, t.	196	104	112	20	196	104	112	20
Rural	1,669	1,547	193	71	1,662	1,539	193	70
Division No. 3								
Cardston, t.	152	114	87	49	152	114	87	49
Claresholm, t.	72	57	34	19	70	56	33	19
Fort MacLeod, t.	104	54	64	14	104	52	64	12
Magrath, t.	69	23	48	2	69	23	48	2
Pincher Creek, t.	160	65	100	5	157	65	97	5
Rural	644	683	70	109	626	665	69	108
Division No. 4								
Hanna, t.	106	42	65	1	106	42	65	1
Rural	213	226	35	48	207	220	35	48
Division No. 5								
Drumheller, c.	159	82	85	8	159	82	85	8
Three Hills, t.	67	45	35	13	67	45	35	13
Vulcan, t.	38	24	24	10	38	24	24	10
Rural	304	606	18	320	302	603	18	319
Division No. 6								
Calgary, c.	9,002	8,106	974	78	8,987	8,091	973	77
Didsbury, t.	73	28	58	13	73	28	58	13
High River, t.	154	35	124	5	154	35	124	5
Olds, t.	145	90	73	18	145	90	73	18
Rural	9,422	8,877	638	93	9,405	8,861	636	92
Division No. 7								
Castor, t.	55	16	42	3	53	16	40	3
Provost, t.	77	28	56	7	77	28	56	7
Stettler, t.	129	67	68	6	128	65	68	5
Wainwright, t.	121	70	61	10	119	68	61	10
Rural	538	595	46	103	530	587	46	103
Division No. 8								
Innisfail, t.	123	46	84	7	123	46	84	7
Lacombe, t.	156	57	110	11	156	57	110	11
Ponoka, t.	110	79	50	19	110	79	50	19
Red Deer, c.	752	540	249	37	751	539	249	37
Rimbey, t.	61	24	40	3	60	23	40	3
Rocky Mountain House, t.	145	115	69	39	141	111	68	38
Sylvan Lake, t.	-	35	-	35	-	35	-	35
Rural	1,451	1,646	61	256	1,443	1,637	61	255



## DIVISION OF VITAL STATISTICS

TABLE 15  
LIVE BIRTHS AND LIVE BIRTHS IN HOSPITAL BY OCCURRENCE AND RESIDENCE FOR  
CENSUS DIVISIONS AND INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1970

	TOTAL BIRTHS				BIRTHS IN HOSPITAL			
	Total by occurrence	Total by residence	By occurrence; residence elsewhere	By residence; occurrence elsewhere	Total by occurrence	Total by residence	By occurrence; residence elsewhere	By residence; occurrence elsewhere
Division No. 9								
Banff, t.	93	48	51	6	93	48	51	6
Bellevue, vl.	2	23	-	21	2	23	-	21
Blairmore, t.	4	37	3	36	4	36	3	35
Canmore, vl.	30	46	5	21	30	46	5	21
Coleman, t.	3	25	-	22	3	25	-	22
Jasper, t.	84	68	22	6	84	68	22	6
Rural	275	345	31	101	273	341	31	99
Division No. 10								
Camrose, c.	231	125	121	15	231	125	121	15
Lloydminster, c. (Pt.)	-	101	-	101	-	101	-	101
Two Hills, t.	12	7	7	2	12	7	7	2
Vegreville, t.	103	50	60	7	103	50	60	7
Vermilion, t.	113	47	74	8	112	47	73	8
Viking, t.	60	20	43	3	60	20	43	3
Rural	751	927	104	280	747	923	104	280
Division No. 11								
Devon, t.	-	28	-	28	-	28	-	28
Drayton Valley, t.	222	112	123	13	222	112	123	13
Edmonton, c.	11,010	9,063	2,092	145	10,992	9,046	2,091	145
Fort Saskatchewan, t.	100	133	30	63	99	133	29	63
Leduc, t.	116	82	68	34	116	82	68	34
Morinville, t.	-	43	-	43	-	43	-	43
St. Albert, t.	36	193	20	177	35	191	20	176
Stony Plain, t.	136	33	114	11	136	33	114	11
Wetaskiwin, c.	308	110	212	14	308	110	212	14
Rural	11,953	11,137	1,012	196	11,927	11,111	1,012	196
Division No. 12								
Bonnyville, t.	152	74	94	16	152	74	94	16
Cold Lake, t.	94	32	72	10	94	32	72	10
Fort McMurray, t.	216	194	52	30	215	193	52	30
Grand Centre, t.	-	50	-	50	-	50	-	50
Lac La Biche, t.	149	74	83	8	149	74	83	8
St. Paul, t.	235	106	138	9	235	106	138	9
Rural	1,139	1,278	44	183	1,123	1,262	44	183
Division No. 13								
Athabasca, t.	108	38	79	9	108	38	79	9
Barrhead, t.	204	63	141	-	204	63	141	-
Redwater, t.	-	26	-	26	-	26	-	26
Westlock, t.	197	61	143	7	197	61	143	7
Rural	592	738	78	224	588	734	78	224
Division No. 14								
Edson, t.	129	97	62	30	128	96	62	30
Hinton, t.	148	116	35	3	146	115	34	3
Whitecourt, t.	146	103	60	17	146	103	60	17
Rural	450	525	48	123	443	519	47	123
Division No. 15								
Beaverlodge, t.	40	19	32	11	39	18	32	11
Fairview, t.	108	45	71	8	108	45	71	8
Grande Prairie, c.	522	326	214	18	521	325	214	18
Grimshaw, t.	1	40	-	39	-	39	-	39
High Prairie, t.	243	73	177	7	241	72	176	7
Manning, t.	63	16	52	5	62	16	51	5
McLennan, t.	96	26	71	1	96	26	71	1
Peace River, t.	296	151	157	12	296	151	157	12
Slave Lake, t.	43	41	14	12	43	41	14	12
Spirit River, t.	57	12	46	1	57	12	46	1
Swan Hills, t.	-	36	-	36	-	36	-	36
Valleyview, t.	93	72	45	24	93	71	45	23
Rural	1,984	2,213	35	264	1,920	2,149	35	264

TABLE 16  
LIVE BIRTHS BY MONTHS IN ALBERTA, 1970

	Total	January	February	March	April	May	June	July	August	September	October	November	December
Province of Alberta	31,967	2,526	2,333	2,798	2,774	2,828	2,649	2,799	2,700	2,703	2,642	2,516	2,699
Male	16,473	1,311	1,243	1,400	1,405	1,436	1,358	1,507	1,416	1,381	1,374	1,300	1,342
Female	15,494	1,215	1,090	1,398	1,369	1,392	1,291	1,292	1,284	1,322	1,268	1,216	1,357

## DIVISION OF VITAL STATISTICS

TABLE 17  
LIVE BIRTHS BY AGE OF PARENTS, ALBERTA, 1970

Age of Mother (Years)	AGE OF FATHER										Legitimate	Illegitimate	Total
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 & Over	Not Stated	
Under													
11	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-
14	3	1	-	-	-	-	-	-	-	-	-	33	37
15	17	13	2	1	-	-	-	-	-	-	-	87	120
16	74	74	3	5	1	-	-	-	-	-	-	152	426
17	164	296	42	5	2	1	-	-	-	-	-	510	917
18	189	608	85	16	3	1	-	-	-	-	-	902	1,343
19	123	925	209	37	5	4	-	-	-	-	-	1,303	1,787
20	41	1,072	392	64	22	4	1	-	1	-	-	1,597	2,007
21	13	1,134	598	96	24	8	1	2	-	-	-	1,877	2,227
22	8	1,031	958	184	45	13	3	2	1	1	-	2,247	2,520
23	2	787	1,277	276	72	22	3	-	-	-	-	2,440	2,683
24	2	374	1,401	383	80	15	3	1	-	-	-	2,259	2,433
25	3	174	1,265	408	94	21	8	1	-	-	-	1,975	2,133
26	-	85	1,139	569	143	36	9	1	-	-	-	1,985	2,116
27	-	34	901	622	152	31	8	3	1	-	-	1,782	2,042
28	-	26	504	639	181	45	7	3	-	-	-	1,405	1,842
29	-	22	322	645	201	59	11	5	-	-	-	1,265	1,485
30	-	14	168	577	240	81	20	3	2	-	-	1,106	1,329
31	-	6	83	420	264	73	11	1	1	-	-	1,156	1,156
32	-	-	46	332	247	82	11	5	2	-	-	859	859
33	-	4	28	206	276	75	15	1	1	-	-	726	764
34	-	3	13	140	215	88	15	4	1	-	-	606	652
35	-	1	13	80	255	106	26	2	4	-	-	479	518
36	-	2	9	42	185	122	35	8	1	-	-	488	524
37	-	6	20	20	156	110	30	7	1	1	-	405	428
38	-	1	7	17	119	127	34	10	1	1	1	331	354
39	-	-	3	12	98	123	39	14	2	2	-	318	344
40	-	1	-	7	31	90	30	11	5	-	-	291	301
41	-	-	-	3	16	54	33	6	5	-	-	175	186
42	-	-	-	3	13	49	34	9	5	2	-	119	129
43	-	-	-	2	3	27	32	8	2	3	1	114	120
44	-	-	-	-	3	7	10	8	3	-	-	75	80
45	-	-	-	-	1	3	11	3	-	-	-	31	33
46	-	-	-	-	1	3	7	3	-	-	-	18	20
47	-	-	-	-	1	2	7	2	-	-	-	11	12
48	-	-	-	-	1	2	2	2	-	-	-	7	9
49	-	-	-	-	-	-	2	3	-	-	-	5	5
50 & over	-	-	-	-	-	-	-	1	-	-	-	1	1
Not Stated	1	2	3	2	2	1	-	-	1	-	-	-	-
Total	640	6,690	9,477	5,808	3,151	1,480	451	127	36	9	4	14	31,967

TABLE 18  
LIVE BIRTHS BY AGE OF MOTHER AND TOTAL BIRTH ORDER, ALBERTA, 1970

[illegible]



TABLE 19  
MULTIPLE BIRTHS BY AGE OF MOTHER, ALBERTA, 1970

Age of Mother (years)	Total confinements	Total Children				Single			Sets of Twins						Sets of Triplets			
		Total	Live-born	Stillborn		Live-born	Stillborn		Both live-born	1 Live-born 1 Stillborn		Both Stillborn		All live-born	2 Live-born 1 Stillborn		1 Liveborn 2 Stillborn	
				20-27 Weeks	28+ Weeks		20-27 Weeks	28+ Weeks		20-27 Weeks	28+ Weeks	20-27 Weeks	28+ Weeks		20-27 Weeks	28+ Weeks	20-27 Weeks	28+ Weeks
Total	32,033	32,359	31,967	92	300	31,344	86	283	296	2	7	2	4	7	-	-	-	2
11	1	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	7	7	7	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-
14	36	37	37	-	-	35	-	-	1	-	-	-	-	-	-	-	-	-
15	122	122	120	1	1	120	1	1	-	-	-	-	-	-	-	-	-	-
16	427	428	426	2	-	424	2	-	1	-	-	-	-	-	-	-	-	-
17	922	926	917	3	6	909	3	6	4	-	-	-	-	-	-	-	-	-
18	1,344	1,357	1,343	4	10	1,318	4	10	11	-	-	-	-	1	-	-	-	-
19	1,803	1,814	1,787	7	20	1,765	7	20	11	-	-	-	-	-	-	-	-	-
20	2,011	2,024	2,007	7	10	1,983	7	9	10	-	1	-	-	1	-	-	-	-
21	2,246	2,264	2,227	7	30	2,192	6	30	17	1	-	-	-	-	-	-	-	-
22	2,521	2,547	2,520	8	19	2,470	8	17	25	-	-	-	1	-	-	-	-	-
23	2,691	2,710	2,683	4	23	2,648	3	21	17	1	-	-	1	-	-	-	-	-
24	2,424	2,450	2,433	5	12	2,382	5	12	24	-	-	-	-	1	-	-	-	-
25	2,121	2,151	2,133	4	14	2,074	4	14	28	-	-	-	-	1	-	-	-	-
26	2,112	2,135	2,116	5	14	2,072	5	12	21	-	2	-	-	-	-	-	-	-
27	1,843	1,861	1,842	4	15	1,807	4	14	17	-	1	-	-	-	-	-	-	-
28	1,482	1,502	1,485	2	15	1,446	2	14	19	-	1	-	-	-	-	-	-	-
29	1,330	1,343	1,329	2	12	1,303	2	12	13	-	-	-	-	-	-	-	-	-
30	1,154	1,173	1,156	6	11	1,125	2	9	14	-	-	2	1	1	-	-	-	-
31	905	916	904	3	9	882	3	9	11	-	-	-	-	-	-	-	-	-
32	766	777	764	3	10	743	3	10	9	-	-	-	-	1	-	-	-	-
33	655	666	652	2	12	631	2	10	10	-	-	-	-	-	-	-	-	2
34	523	529	518	1	10	509	1	7	4	-	1	-	1	-	-	-	-	-
35	523	533	524	1	8	505	1	8	8	-	-	-	-	1	-	-	-	-
36	429	435	428	1	6	416	1	6	6	-	-	-	-	-	-	-	-	-
37	359	363	354	3	6	346	3	6	4	-	-	-	-	-	-	-	-	-
38	346	350	344	2	4	336	2	4	4	-	-	-	-	-	-	-	-	-
39	304	307	301	1	5	296	1	4	2	-	1	-	-	-	-	-	-	-
40	189	190	186	1	3	184	1	3	1	-	-	-	-	-	-	-	-	-
41	134	134	129	1	4	129	1	4	-	-	-	-	-	-	-	-	-	-
42	123	123	120	1	2	120	1	2	-	-	-	-	-	-	-	-	-	-
43	79	83	80	-	3	72	-	3	4	-	-	-	-	-	-	-	-	-
44	36	36	33	-	3	33	-	3	-	-	-	-	-	-	-	-	-	-
45	21	21	20	-	1	20	-	1	-	-	-	-	-	-	-	-	-	-
46	13	13	12	-	1	12	-	1	-	-	-	-	-	-	-	-	-	-
47	9	9	9	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-
48	5	5	5	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-
49	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
50+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not Stated	16	16	15	-	1	15	-	1	-	-	-	-	-	-	-	-	-	-

TABLE 20  
LIVE BIRTHS BY PERIOD OF GESTATION AND BIRTHWEIGHT, ALBERTA, 1970

Birthweight (grams)	Total	Under 16 weeks	Period of gestation (weeks)																									Not stated								
			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		41	42	43	44+				
Total			16,473	-	1	-	1	-	1	-	4	4	7	9	20	9	18	22	30	19	38	34	80	54	109	139	448	632	1,612	2,521	7,292	2,057	1,075	179	33	26
500 or less	10	-	1	-	1	-	1	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
501- 750	29	-	-	-	2	2	5	6	8	-	3	2	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
751-1000	47	-	-	-	-	-	2	1	6	5	9	9	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1001-1250	50	-	-	-	-	-	-	-	1	4	1	3	6	11	6	12	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1251-1500	55	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1501-1750	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1751-2000	148	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001-2250	233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2251-2500	566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2501-2750	1,123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2751-3000	1,822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3001-3250	2,920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3251-3500	3,360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3501-3750	2,823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3751-4000	1,742	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4001-4250	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4251-4500	336	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4501-4750	148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4751-5000	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5001-5250	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5251-5500	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5501-5750	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5751-6000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6001-6250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6251-6500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6501+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not stated	18	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MALES

TABLE 20  
LIVE BIRTHS BY PERIOD OF GESTATION AND BIRTHWEIGHT, ALBERTA, 1970

Birthweight (grams)	Total	Under 16 weeks	Period of gestation (weeks)																										44+	Not stated					
			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			42	43	15	18	
FEMALES																																			
Total	15,494	-	-	-	1	2	1	5	4	2	3	11	11	13	17	29	15	47	25	78	49	107	136	370	558	1,402	2,341	6,995	1,991	1,079	170	15	18		
500 or less	9	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
501- 750	27	-	-	-	2	2	1	3	1	-	-	4	7	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
751-1000	35	-	-	-	1	-	-	7	3	-	-	2	9	7	3	1	-	2	1	1	-	-	1	1	-	-	-	1	-	-	-	-	-	-	
1001-1250	42	-	-	-	-	-	-	-	-	-	-	2	1	4	11	3	10	3	3	3	1	1	-	2	-	-	-	-	-	-	-	-	-	-	
1251-1500	64	-	-	-	-	-	-	-	-	-	-	-	1	3	6	7	13	8	11	2	5	4	2	2	-	-	-	-	-	-	-	-	-	-	
1501-1750	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	7	24	4	12	5	11	4	2	7	3	-	-	-	-	-	-	
1751-2000	162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	5	2	22	14	19	21	26	15	14	7	12	-	-	-	-	-	-	
2001-2250	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	8	16	28	29	49	38	45	32	56	6	-	-	-	-	1	
2251-2500	720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	7	5	20	27	84	90	136	104	180	43	14	4	-	-	2		
2501-2750	1,403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	27	81	107	249	245	553	75	47	8	-	-	1		
2751-3000	2,214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	3	6	11	41	108	296	436	956	231	107	13	-	4		
3001-3250	3,233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	3	38	95	298	570	1,542	416	230	28	4	1	1		
3251-3500	3,079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	18	57	201	470	1,558	493	229	40	3	4	4		
3501-3750	2,197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	7	25	105	283	1,155	375	203	35	3	1	1	
3751-4000	1,131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	15	34	123	577	221	128	25	2	1	1	
4001-4250	510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	13	45	272	85	74	9	3	1	1	
4251-4500	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	11	72	26	25	7	-	-	-	
4501-4750	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	36	16	10	-	-	-	-	-	
4751-5000	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	2	3	1	-	-	-	
5001-5250	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
5251-5500	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5501-5750	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5751-6000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6001-6250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6251-6500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6501+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not stated	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2







TABLE 22  
MARRIAGES BY MONTH OF MARRIAGE, 1970, ALBERTA

TOTAL 15,285			
January	593	July	1,660
February	791	August	2,061
March	845	September	1,349
April	994	October	1,440
May	1,492	November	1,212
June	1,633	December	1,215

TABLE 23

TABLE 24  
MARRIAGES, MARITAL STATUS OF BRIDEGROOM BY STATUS OF BRIDE, CANADA, 1970

	Total Marriages	Marriages between								
		Bachelors and			Widowers and			Divorced Men and		
		Spinsters	Widows	Divorced Women	Spinsters	Widows	Divorced Women	Spinsters	Widows	Divorced Women
Canada	188,428	158,453	2,288	6,526	1,661	3,881	1,248	7,307	1,786	5,278
Newfoundland	4,466	4,223	51	32	26	65	5	46	6	12
Prince Edward Island	913	811	18	17	5	23	5	20	5	9
Nova Scotia	6,800	5,770	103	251	62	135	39	233	54	53
New Brunswick	5,696	5,032	81	127	52	120	26	128	37	93
Quebec	49,606	44,968	491	653	556	1,052	130	1,204	140	12
Ontario	68,874	56,501	816	2,822	595	1,438	549	3,011	820	2,322
Manitoba	9,008	7,540	113	328	57	215	73	368	81	233
Saskatchewan	7,317	6,441	126	207	40	117	32	196	60	98
Alberta	15,285	11,948	228	876	114	250	145	782	221	721
British Columbia	20,026	14,869	257	1,189	147	463	244	1,301	358	1,198
Yukon	201	140	2	18	2	1	—	11	4	23
Northwest Territories	236	210	2	6	5	2	—	7	—	4

TABLE 25  
MARRIAGES, MARITAL STATUS BY AGE OF BRIDEGROOM, 1970

AGES	MARITAL STATUS			
	Total	Bachelors	Widowers	Divorced Men
Under 20 years	1,271	1,271	—	—
20 - 24 years	7,847	7,744	6	97
25 - 29 years	2,962	2,609	8	345
30 - 34 years	1,026	674	14	338
35 - 39 years	622	319	28	275
40 - 44 years	456	195	48	213
45 - 49 years	360	113	52	195
50 - 54 years	243	57	74	112
55 - 59 years	189	31	81	77
60 - 64 years	124	19	61	44
65 - 69 years	82	11	54	17
70 - 74 years	53	4	40	9
75 and over	50	5	43	2
TOTAL	15,285	13,052	509	1,724

TABLE 26  
MARRIAGES, MARITAL STATUS BY AGE OF BRIDE, 1970

AGES	MARITAL STATUS			
	Total	Spinsters	Widows	Divorced Women
Under 20 years	4,924	4,907	3	14
20 - 24 years	6,577	6,255	27	295
25 - 29 years	1,543	1,084	36	423
30 - 34 years	638	302	56	280
35 - 39 years	367	118	48	201
40 - 44 years	360	76	74	210
45 - 49 years	330	50	105	175
50 - 54 years	215	20	113	82
55 - 59 years	128	16	74	38
60 - 64 years	109	12	84	13
65 - 69 years	45	2	35	8
70 - 74 years	34	2	30	2
75 and over	15	—	14	1
TOTAL	15,285	12,844	699	1,742



TABLE 27  
MARRIAGES, BIRTHPLACE OF GROOM BY BIRTHPLACE OF BRIDE, ALBERTA, 1970

Birthplace of Groom	Total Grooms	Birthplace of Bride												Province and Possessions	Europe	Asia	United States	Other	Unspecified		
		Canada										Yukon	N.W.T.								
		Total Nfid.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.										
Canada	12,682	11,666	26	28	106	69	116	455	444	1,420	8,476	486	15	24	1	354	452	27	169	13	1
Newfoundland	48	43	7	-	3	-	-	4	3	8	18	-	-	-	-	3	2	-	-	-	-
Prince Edward Island	39	35	-	9	-	1	-	2	2	2	17	2	-	-	-	1	2	-	1	-	-
Nova Scotia	177	162	-	-	18	2	1	14	4	15	102	6	-	-	-	7	6	-	2	-	-
New Brunswick	105	93	1	-	-	11	3	7	5	3	59	4	-	-	-	6	4	2	-	-	-
Quebec	222	202	1	2	1	3	19	16	9	18	121	12	-	-	-	9	6	1	4	-	-
Ontario	687	603	-	1	8	3	14	72	26	74	377	24	2	2	-	33	31	2	16	2	-
Manitoba	587	536	-	-	8	4	8	20	67	73	324	30	-	2	-	21	21	-	7	2	-
Saskatchewan	1,781	1,646	5	9	20	7	12	60	71	435	946	75	3	2	1	40	73	3	18	1	-
Alberta.	8,358	7,738	12	6	44	34	52	232	229	723	6,096	284	9	17	-	210	281	16	104	8	1
British Columbia	650	584	-	1	4	4	5	26	27	67	400	48	1	1	-	24	24	3	15	-	-
Yukon	11	10	-	-	-	-	2	-	-	-	8	-	-	-	-	-	1	-	-	-	-
Northwest Territories	17	14	-	-	-	-	-	2	1	2	8	1	-	-	-	-	1	-	2	-	-
Province Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
British Isles and Possessions	742	498	2	3	9	2	7	31	26	54	334	26	3	1	-	175	40	17	11	-	1
Europe	1,298	737	1	-	15	5	10	34	31	82	515	38	1	4	1	60	467	6	22	5	1
Asia	126	20	-	-	-	-	-	-	3	1	15	1	-	-	-	5	9	90	2	-	-
United States	397	249	2	-	3	-	3	16	9	27	177	11	-	1	-	19	15	2	108	4	-
Other	38	27	-	-	-	2	2	1	3	4	14	1	-	-	-	3	5	2	-	1	-
Unspecified	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL	15,285	13,198	32	31	133	78	138	537	516	1,588	9,531	563	19	30	2	616	988	144	312	23	4



TABLE 29  
STILLBIRTHS BY SEX AND PERIOD OF GESTATION, ALBERTA, 1970

PERIOD OF GESTATION	MALE	FEMALE
20 weeks	6	6
21 weeks	3	4
22 weeks	6	8
23 weeks	6	2
24 weeks	9	13
25 weeks	6	6
26 weeks	9	3
27 weeks	3	2
28 weeks	6	7
29 weeks	3	2
30 weeks	8	7
31 weeks	4	5
32 weeks	7	10
33 weeks	3	2
34 weeks	13	10
35 weeks	14	9
36 weeks	21	14
37 weeks	4	14
38 weeks	15	9
39 weeks	12	15
40 weeks	20	29
41 weeks	9	9
42 weeks	7	5
43 weeks	-	-
44 weeks	3	2
45 weeks	-	-
46 weeks	-	-
47 weeks	-	-
48 weeks	-	-
Not Stated	2	-
Total 28+ weeks	151	149
Total 20+ weeks	199	193

TABLE 30  
STILLBIRTHS CLASSIFIED BY AGE OF MOTHER AND PERIOD OF GESTATION, ALBERTA, 1970

Period of gestation	All Ages		Under 15 years		15-19 years		20-24 years		25-29 years		30-34 years		35-39 years		40-44 years		45 years and over		Not stated	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
20 weeks	6	6			3	3	2	1	1	2										
21 "	3	4					1	1		1										
22 "	6	8			2		1	4	1	1										
23 "	6	2			2		1			1										
24 "	9	13			3	1	3	5	1	3						1				
25 "	6	6			2	1	3	2	2	1						2				
26 "	9	3	1				3	1	4	1						1				
27 "	3	2					3	1	1											
28 "	6	7			1	2	3	1	1	1										
29 "	3	2					3	2												
30 "	8	7				2	5	3	2	1										
31 "	4	5				1	2	3	2	2					1					
32 "	7	10			1	1	2	3	2	2										
33 "	3	2							1	1										
34 "	13	10			2		4	3	2	4										
35 "	14	9			2		4	5	6	5										
36 "	21	14			2		8	3	3	4									1	
37 "	4	14					1	2	3	4										
38 "	15	9			2		2	4	2	1										
39 "	12	15					3	2	4	6										
40 "	20	29			2	9	3	9	4	5										
41 "	9	9			2		3	6	3	3										
42 "	7	5			2		2	2	2	2										
43 "									1											
44 "	3	2			1		2			1										
45 "																				
46 "																				
47 "																				
48 "																				
49 "																				
50 "																				
Not stated	2				2															
Total	199	193	1		31	23	59	66	48	39	31	36	19	18	8	10	1	1	1	
20-27 weeks	48	44	1		12	5	14	17	10	7	5	10	4	4	2	1				
28+ weeks	151	149			19	18	45	49	38	32	26	26	15	14	6	9	1		1	



TABLE 31  
RATIO OF MALE TO FEMALE BIRTHS AND OF BIRTHS TO DEATHS

Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths	Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths
1905	1,059	3.13	1940	1,033	2.79
1906	1,094	2.07	1941	1,054	2.71
1907	1,075	2.96	1942	1,058	3.02
1908	1,077	2.73	1943	1,041	2.96
1909	1,086	2.59	1944	1,060	3.06
1910	1,065	2.69	1945	1,061	3.08
1911	1,103	2.43	1946	1,036	3.36
1912	1,084	2.43	1947	1,061	3.76
1913	1,053	2.67	1948	1,049	3.44
1914	1,081	3.30	1949	1,051	3.52
1915	1,000	3.74	1950	1,052	3.74
1916	1,063	3.29	1951	1,039	3.76
1917	1,061	3.25	1952	1,058	3.95
1918	1,069	1.88	1953	1,063	4.10
1919	1,074	2.56	1954	1,073	4.60
1920	1,055	2.92	1955	1,066	4.31
1921	1,055	3.32	1956	1,060	4.48
1922	1,034	3.06	1957	1,055	4.32
1923	1,072	3.13	1958	1,064	4.47
1924	1,036	2.97	1959	1,056	4.49
1925	1,036	2.97	1960	1,056	4.38
1926	1,053	2.80	1961	1,045	4.39
1927	1,065	2.94	1962	1,039	4.18
1928	1,064	2.75	1963	1,056	4.07
1929	1,042	2.71	1964	1,048	3.81
1930	1,027	3.21	1965	1,074	3.42
1931	1,075	3.25	1966	1,035	3.16
1932	1,052	3.08	1967	1,044	3.22
1933	1,053	3.01	1968	1,077	3.02
1934	1,032	3.04	1969	1,036	3.11
1935	1,055	2.81	1970	1,063	3.16
1936	1,049	2.57			
1937	1,019	2.38			
1938	1,046	2.70			
1939	1,046	2.85			

TABLE 32  
POPULATION, BIRTHS, MARRIAGES, DEATHS AND RATES FOR THE YEARS 1905 - 1970

Year	Population	Number of Births	Birth Rate	Number of Marriages	Marriage Rate	Number of Deaths	Death Rate	Infantile Death Rate Per 1,000 Births	Maternal Death Rate per 10,000 Births	Natural Increase
1905	-	421	-	187	-	114	-	-	-	-
1906	185,000	3,003	20.41	927	6.77	1,091	7.36	90.00	-	13.04
1907	236,000	4,732	20.05	1,907	8.08	1,578	6.68	100.27	63.3	13.36
1908	266,000	5,973	22.45	2,032	7.63	2,188	8.22	126.57	60.2	14.22
1909	301,000	6,897	22.91	2,384	7.92	2,662	8.81	-	-	14.07
1910	336,000	8,321	24.49	3,086	9.18	3,526	10.49	129.49	86.3	14.00
1911	374,000	8,813	23.56	3,630	9.70	3,618	9.67	134.46	97.5	13.88
1912	400,000	10,284	25.71	4,429	11.07	4,232	10.58	124.75	82.6	15.13
1913	429,000	11,871	28.47	5,053	12.12	4,432	10.63	120.47	70.7	17.84
1914	459,000	13,685	30.75	4,623	10.39	4,417	9.32	100.54	61.3	21.43
1915	480,000	13,452	28.90	4,202	9.06	3,588	7.73	87.9	57.9	21.26
1916	496,000	13,331	27.87	4,230	8.53	4,058	8.18	90.5	72.0	18.69
1917	508,000	13,576	27.01	4,270	8.54	4,047	8.09	87.30	64.8	18.92
1918	522,000	14,890	25.72	4,048	6.98	7,924	13.86	107.10	55.1	11.86
1919	522,000	14,130	23.95	4,718	7.90	5,507	9.33	110.30	64.4	14.62
1920	565,000	16,565	26.72	5,110	8.24	5,675	9.15	93.70	83.8	17.57
1921	588,000	16,414	27.89	4,661	7.92	4,940	8.39	85.65	72.4	19.50
1922	592,000	16,163	26.44	4,272	6.99	5,281	8.62	91.93	66.8	17.83
1923	593,000	15,153	25.75	4,177	6.09	4,843	8.06	90.54	55.0	18.75
1924	597,000	14,598	24.74	4,160	7.50	4,907	8.30	82.40	61.8	16.42
1925	602,000	15,014	25.02	4,363	7.27	4,717	7.86	72.90	57.6	16.16
1926	608,000	14,455	23.79	4,498	7.40	5,156	8.49	81.63	58.2	15.31
1927	623,000	14,897	24.03	4,707	7.58	5,059	8.16	74.51	63.8	15.87
1928	658,000	15,692	24.79	5,776	9.12	5,699	9.00	76.50	67.5	15.79
1929	684,000	16,924	26.19	6,004	9.29	6,239	9.65	77.40	72.6	16.54
1930	708,000	17,649	26.74	5,334	8.08	5,396	8.33	63.57	64.6	18.41
1931	732,000	17,252	23.57	5,142	7.02	5,302	7.24	69.38	50.4	16.32
1932	740,000	16,990	22.96	5,054	6.83	5,521	7.46	58.68	37.7	15.50
1933	748,000	16,123	21.33	5,389	7.10	5,346	7.07	59.90	45.3	14.24
1934	756,000	16,236	21.10	6,053	7.87	5,337	6.93	54.89	49.9	14.01
1935	770,000	16,183	21.0	6,010	7.7	5,729	7.3	57.8	42.6	14.0
1936	772,782	15,786	20.4	6,020	7.8	6,147	8.0	60.0	57.6	12.5
1937	778,000	15,903	20.4	6,345	8.2	6,261	8.0	63.0	48.4	12.4
1938	783,000	15,891	20.3	6,993	8.9	5,871	7.5	51.0	42.8	12.8
1939	789,000	16,470	20.9	7,838	9.9	5,789	7.3	46.0	35.8	13.6
1940	790,000	17,359	21.8	8,782	11.0	6,203	7.8	48.0	39.7	14.1
1941	796,169	17,308	21.7	8,470	10.7	6,385	8.0	51.0	31.2	13.7
1942	805,000	18,317	22.7	9,034	11.2	6,091	7.5	38.0	23.5	15.2
1943	792,000	19,290	24.3	7,771	9.8	7,345	7.6	30.0	27.0	22.4
1944	818,000	19,373	23.7	7,299	8.9	6,524	8.2	42.0	16.0	16.1
1945	826,000	19,939	24.1	7,310	8.8	6,320	7.7	46.0	24.1	16.0
1946	803,330	22,184	27.6	9,478	11.8	6,454	7.8	43.0	14.4	16.2
1947	822,000	24,631	30.0	8,797	10.7	6,601	8.2	42.5	8.9	19.3
1948	846,000	24,075	28.5	8,844	10.5	6,543	8.0	37.0	12.0	22.0
1949	871,000	24,935	28.7	9,037	10.4	6,987	8.0	39.0	10.0	20.2
1950	895,000	25,625	28.7	9,294	10.4	7,083	8.2	33.0	7.4	20.5
1951	939,501	27,003	28.7	9,305	9.9	6,856	7.7	32.0	5.6	21.0
1952	970,000	29,105	30.0	9,514	9.8	7,646	7.6	30.0	5.2	23.7
1953	1,002,000	31,376	31.3	10,126	10.1	7,167	7.6	30.0	6.7	21.1
1954	1,039,000	33,593	32.3	9,960	9.6	7,520	7.2	26.0	3.3	22.3
1955	1,066,000	34,357	32.2	9,844	9.2	7,956	7.5	26.0	4.4	23.1
1956	1,123,116	34,951	31.1	9,965	8.9	7,786	6.9	25.0	4.0	24.2
1957	1,160,000	35,719	30.8	10,117	8.7	8,255	7.1	27.0	3.4	23.7
1958	1,201,000	36,842	30.7	10,186	8.5	8,237	6.9	25.0	4.6	23.8
1959	1,243,000	38,080	30.6	10,402	8.4	8,481	6.8	24.0	3.7	23.8
1960	1,283,000	39,009	30.4	10,482	8.2	8,888	6.9	26.2	1.8	23.5
1961	1,331,944	38,914	29.2	10,474	7.9	8,863	6.7	27.0	2.3	22.5
1962	1,370,000	38,804	28.3	10,423	7.6	9,264	6.8	25.0	4.1	21.5
1963	1,405,000	38,467	27.4	10,163	7.2	9,444	6.7	23.6	2.9	20.7
1964	1,432,000	36,173	25.3	10,634	7.4	9,482	6.6	23.9	2.2	18.7
1965	1,451,000	32,664	22.5	11,029	7.6	9,534	6.6	24.0	1.2	15.9
1966	1,463,203	30,592	20.9	11,879	8.1	9,677	6.6	20.9	2.0	14.3
1967	1,490,000	30,691	20.6	12,903	8.7	9,523	6.4	20.0	1.6	14.2
1968	1,526,000	30,149	19.8	13,640	8.9	9,963	6.5	20.1	2.6	13.3
1969	1,561,000	30,855	19.8	14,846	9.5	9,921	6.4	19.0	0.6	13.4
1970	1,600,000	31,967	20.0	15,285	9.6	10,112	6.3	19.1	1.3	13.7









